Clinical Medicine

Original Articles for November, 1955

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EDITORIAL

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EDITORIAL

A Sensible Way of Meeting the Menace of Drug Addiction

The punitive approach should be discarded and replaced with federally controlled supervision and sale of drugs at low cost to addicts

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JAMES M. NORTHINGTON, M.D., *Editor*

One of the great organizations of doctors, in our country has made an exhaustive investigation of every phase of drug addiction, and reported its findings and recommendations. It is the Editor's earnest hope that every reader of Clinical Medicine will read this editorial carefully, and then use his great influence toward having the program put into effect.

From our appraisal of developments under the present punitive approach to the problem of drug addiction, it is the Academy's belief that the following conclusions are justified:

The illicit drug traffic still persists and it prevails in an even more sinister form since it now enslaves many youths.

The punitive approach is no deterrent to the non-addict dealer or to the addict. The record of repeat jail sentences for addicts is so large that the procedure has been called "the revolving door policy." During incarceration the young addict learns from other prisoners, not a skill with which he can support himself, but how to get along without working at all, even less desirable ways of maintaining his drug habit, and a complete course in drug addiction.

Under the law, most of the addicts

are regarded as criminals rather than sick persons.

The present federal regulations control the practice of medicine in relation to drug addiction to such an extent, and so look upon the physician as a potential criminal, that he prefers not to include the treatment of drug addiction in his practice.

The rehabilitation of the drug addict is a highly expensive, prolonged procedure necessitating repetitive efforts.

As a means of stamping out drug addiction, prevention remains the most practical and essential step. The crux of any program aimed to rid society of drug addiction is to stop the formation of new addicts.

The Academy's Proposals: The objective is to stamp out drug addiction as completely as possible. If the objective is to be achieved, there must be little or no formation of new addicts. Concurrently with the attempt to stop the formation of new addicts, efforts should be directed to rehabilitate as many addicted persons as is possible. This would also contribute to stopping the spread of addiction. Finally, medical supervision should be provided for individuals already addicted to narcotic drugs who are resistant to rehabilitation.

The Academy proposes a 6-point program to achieve these objectives. All measures are to be instituted, not just one.

1. There should be a change in attitude toward the addict. He is a sick person, not a criminal. He may commit criminal acts to maintain his drug supply; but it is unjust to consider him criminal simply because he uses narcotic drugs.

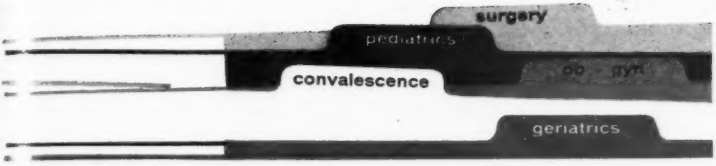
2. The Academy believes that the most effective way to eradicate drug addiction is to take the profit out of the illicit drug traffic. The causes of addiction are cited as: maladjustment; underprivilege; broken home; poverty. Such conditions may well be contributory factors; but they are not the prime cause. Rather, profit looms large as the principal factor.

Availability of the drug, ignorance, curiosity and persuasion are the necessary ingredients for initiating drug use. Curiosity and desire to conform to the behavior code of his age-group is a factor in attracting an adolescent to the use of narcotic drugs.

Prospective users are furnished drugs by the "pusher" until addiction occurs. Then the addict is required to pay for every dose and thus a life of slavery begins. The formation of new addicts is principally the result of commercial exploitation.

The addict should be able to obtain his drugs at low cost under federal control, in conjunction with efforts to have him undergo withdrawal. Under this plan, these addicts, as sick persons, would apply for medical care and supervision. Criminal acts would no longer be necessary in order to obtain a supply of drugs and there would be no incentive to create new addicts. Agents and black markets would disappear from lack of patronage. Since 85% of the "pushers" on the streets are said to be addicts, they would be glad to forego this dangerous occupation if they were furnished with their needed drug. Thus the bulk of the traffic would disappear.

An integral part of the program would be medical supervision of existing addicts, with vigorous efforts toward their rehabilitation. By a change in social attitude to regard



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ing them as sick persons and enabling them to obtain their supply of drug cheaply, it will be possible to reach addicts in a dignified way. They would come under supervision in the interest of health, not because of entanglement with the law.

Physical dependence on drugs can be removed by the withdrawal treatment. The mental and emotional fixations are to be overcome only through the individual's own efforts and desires. There is a need to maintain contact with recovered addicts so that they may be helped in resisting the return to use of a drug.

Many addicts become so between the ages of 17 and 20 before acquiring a skill by which he can earn an honest living. If he is furnished his drug in required amount, he may be willing to be trained in a useful trade. Then he may be willing to give up drugs.

Addicts resistant to undertaking therapy and continuously refractory to therapy despite all efforts, should be supplied legally and cheaply with the minimum amount of their drug needs; and efforts to persuade them to undergo rehabilitation should be continued.

All addicts receiving drugs from the service clinic or entering a hospital for treatment should be photographed and fingerprinted; copies sent to a central agency, while one copy is retained. By means of a punchcard system monthly checks should be made by the central agency to insure that an addict is not obtaining supplies from more than one clinic.

There is to be no relaxation in the efforts toward complete and permanent elimination of the supply of illegal narcotic drugs.

Combined with the medical care of narcotic addicts and severe penalties for trafficking in drugs, there should be an adequate program of education for adults, teachers and youth.

By means of the records accumulated at the central agency, it would be possible to have at all times an accurate count of the known resistant addicts in the country, how many were undergoing treatment for their illness and how many relapsed after a period of abstinence. On the basis of such information, research could be focused more readily on the "why" of addiction and on improved methods of treatment.

If a person was a criminal before he became a drug addict, it is not to be expected that he will cease to be one just because he no longer is an addict.

Bull. New York Acad. Med., 31:592-607, 1955.

Appendectomy in Chronic Appendicitis

In children functional abdominal pain, masquerading under many labels such as spastic colon, constipation, abdominal migraine, mesenteric adenitis, etc., is very common, especially near examinations and other times of stress. The whims of the surgeon and/or fears of the parents (as with circumcision) often carry more weight in deciding the issue of appendectomy than the actual condition of the child.

1. G. Wickes, *British M. J.* 4899:1290, 1954.

From a practical standpoint, intestinal obstruction should be divided into two real groups, i.e., simple and strangulated,[2] because of the fact that the mortality rate in simple obstruction, regardless of cause, compares favorably with that of any abdominal surgical emergency. In strangulated intestinal obstruction, the mortality rate remains very high. A search of the literature for reports of mortality rates reveals the following:

Simple Obstruction	3%
Strangulated	20%
Viable Gut	5%
Non-viable Gut	40-50%

Since the mortality rate climbs tremendously in those cases of intestinal obstruction in which gangrenous gut is found, either from a vascular occlusion, or in a too-long untreated case of simple obstruction, it behooves us not to delay and to better differentiate between simple and strangulated obstruction.

DIAGNOSIS

We know that any type of simple obstruction left untreated tends to become strangulated. Strangulated obstruction can be external, such as strangulation in an inguinal hernia, or internal. The first offers no real diagnostic problem. The second is the one in which errors are frequent and mortality rates are high.

These errors are due to one of the following:[3]

1. The cause of obstruction is concealed;
2. There is no pathognomonic sign of internal strangulating obstruction;
3. A similar picture results from many other abdominal conditions.

However, a correct diagnosis can be made if the diagnostic criteria are carefully searched for and interpreted. The points of difference between simple and strangulated intestinal obstruction can be presented by the following table.

Once a positive diagnosis of strangulating obstruction is made, surgical intervention becomes mandatory. There remain certain stumbling blocks to the proper handling, even after a correct diagnosis has been made. These may be divided into three stages:[3]

1. The preoperative preparation
2. The time at which the operation is to be carried out
3. The type of surgical procedure

1. PREOPERATIVE PREPARATION

One of the first and most important steps is that of decompression, by means of gastric or intestinal tubes passed through the nose or mouth. This serves three purposes: (1) to stop vomiting and so prevent further loss of fluids and electrolytes; (2) to remove excessive gas and fluid trapped within the small intestines; (3) decompression of the intestines makes surgery much easier.

A word as to the abuses of tube decompression. Many patients have been relieved completely by tube decompression alone, however; many have been made worse by the prolonged attempt to so overcome an obstruction. Pain relieved by decompression was probably due to distention. If the pain persists after a period of decompression, early surgery should be carried out. By the same token, a rise in pulse count, fever, an increase in white count, and a

2. Evans, E. I. & Bigger, I. A., *J.A.M.A.*, 133:513, 1947.
3. Crowley, R. T. & Winfield, J. A., *Surg., Gynec. & Obst.*, 89:417, 1949.

DIFFERENCE BETWEEN SIMPLE AND STRANGULATED INTESTINAL OBSTRUCTION

	SIMPLE	STRANGULATED
Pain	Onset gradual; less severe tends to disappear during periods of inactive peristalsis	Onset sudden and severe; usually constant with exacerbations
Vomiting	Begins after onset of pain; may not be present in low obstruction; usually occurs at height of peristalsic activity	Occurs at onset of pain; severe, continuous, no relation to peristalsic activity
Shock-like State	Appears late in course of obstruction; not very ill in early stage	May appear early; persistent with progressive severity
Position of Patient	Does not affect	Usually lying in one position
Inspection	Distention	Distention—may not be distended
Palpation	Tenderness may be local seldom rigidity	Generalized tenderness rigidity present
Auscultation	"Tinkling," hyperactive peristalsis	Usually silent
X-ray	"Step ladder" or "herring bone"	Usually one loop
Response to Conservative Therapy	Good	Poor

worsening of the general condition in the face of tube decompression, should be taken as a bad omen.

The second step in the preoperative preparation is the replacement of fluids and electrolytes. Many years ago, at the City of Memphis Hospital, Dr. J. Lucius McGehee instituted a policy that "patients who are admitted with intestinal obstruction will be given 3000 cc. of saline and then operated upon." Today, after extensive calculations and many chemistry determinations, we find an overwhelming percentage of our patients can be handled by giving 3000 cc. of saline and then operating.

No sooner did we learn the milligrams per 100 cc. of the various electrolytes until we changed to milliequivalents. We can transpose from milligram % to milliequivalent by the following formula:[4]

$$\frac{\text{Mg. per 100 cc.} \times 10 \times \text{valence}}{\text{Atomic weight}} = \text{mEq}$$

A practical way to determine the amount of fluid that needs replacing is by determining the % of dehydration (25% being a severe dehydration) and multiplying by the total extra-cellular fluids (12 to 14 liters). Another simple way is by

4. Hardy, J., *Fluid Therapy*, Lea & Febiger, 195

determining how much body weight has been lost. In severe dehydration, one loses 6% of his body weight. In moderate dehydration, one loses 4%. One liter of blood should be given with every three units of fluids.

Those of us having access to a complete laboratory service can readily obtain the exact milliequivalent of the more common electrolytes. But many who do not have a 24-hour laboratory service also have to contend with intestinal obstruction. A practical way to determine the amount of electrolyte needed is to multiply the daily requirements of each by the number of days the patient has gone without his daily requirement. However, the signs and symptoms of the excess or lack of each substance should be clearly understood.

A patient in shock from intestinal obstruction and who has responded well to the preoperative preparation, has an excellent chance of recovery and is probably suffering from a simple obstruction. On the other hand, a patient who shows very little response to adequate preoperative preparation is in serious danger and his chance of recovery is far poorer.

2. THE TIME FOR OPERATION

The time to operate in a case of strangulating obstruction is as soon as the diagnosis is made. In simple obstruction, surgery should be carried out after the fluid and electrolyte imbalance is corrected. There is no real rush. In strangulating obstruction, despite adequate treatment of shock, dehydration, and electrolyte imbalance the general condition improves very little. Any delay to await further improvement after a thorough trial is extremely dangerous. Surgery should be done in spite of the poor condition.

3. TYPE OF SURGERY

The type of surgery depends upon the cause of the obstruction, but one should never forget that in emergency operations the prime concern is to save the patient's life. Since adhesive obstruction is more frequent, and since 80% of adhesive obstructions occur in the terminal ileum, a right rectus incision is made, and collapsed gut is located and traced to the point of obstruction. In adhesive obstruction, *only* the adhesion causing the obstruction is severed. Care is taken not to handle distended gut and to keep it covered with moist warm lap packs. Many ingenious devices have been offered to aseptically remove the fluid and gas from the distended loops of gut. If adequate preoperative preparation has been done and if anesthesia is good, one should have no difficulty closing the abdomen.

If small intestine is found gangrenous, resection and end-to-end anastomosis should be done as quickly as possible. One must not forget that the mortality rate in these cases is around 40%.

One should not resect and anastomose the colon in the face of gangrene; that portion should be exteriorized as a double-barrel colostomy. In obstruction due to neoplasm (the most common cause in the colon), some shunting procedure should be done. Since most obstructing lesions of the colon are found on the left side, a transverse colostomy is all that is needed, as an emergency procedure, to overcome the obstruction. Definitive surgery can be carried out later.

Occasionally, a lesion of the right half of the colon will obstruct. If the ileo-cecal valve is competent, an ileo-transverse colostomy should be done. If the ileo-cecal valve is incompetent so that the picture is one of small bowel obstruction, some type of cecostomy is done despite its disadvantages. Again, definitive surgery is performed later.

Some of the points in the diagnosis and treatment of intestinal obstruction have been discussed. We feel that the persisting high mortality rate in intestinal obstruction is due to the failure of early diagnosis on the part of the physician, or the delay of the patient in consulting his physician, and the failure to apply sound therapeutic principles.

Coronary Artery Disease: Its Relationship With Cholesterosis of the Gallbladder

Of 165 adult autopsy cases of cholesterosis of the gallbladder there were 33 with coronary occlusion and in a review of 1,319 necropsies on adults, we found 299 cases of coronary occlusion and infarctions—22.6%. It was interesting to speculate on the relationship of cholesterosis of the gallbladder with coronary artery disease, since in both conditions, cholesterol and lipids play a major role. From these data, it is shown conclusively that no relationship exists between cholesterosis of the gallbladder and coronary occlusion and infarctions.

Feldman, Maurice, et al., *Amer. J. Digest. Dis.* 23:1-2, 1955.

"Fringe Area" Manifestations of Nasal Allergy Which Physicians Often Fail to Diagnose

Allergic origin should be suspected in patients presenting complaints concerning the nose, throat, ears and larynx

JACK R. ANDERSON, M.D.,* AND WALLACE RUBIN, M.D.,*
New Orleans, Louisiana

Since three of every four patients consulting physicians because of chronic nasal complaints, and a large proportion of those with symptoms referable to the ears, throat, larynx, and chest, suffer with a basic allergic process, it should be obvious how important it is for the practitioner to recognize their true nature and to think of allergy when confronted with them.

CONDITIONS OR FINDINGS REFERABLE TO THE NOSE ITSELF

1. *Recurrent or persistent colds.* Many patients complain that they catch one cold right after another, that once they catch a cold, it hangs on and on, or that they recurrently suffer from something which they describe as "sinus." In most instances, these conditions are not accompanied by constitutional symptoms of upper respiratory infections; the mucosa is pale, and the mucus contains a diagnostic number of eosinophiles. It is not unusual to have a patient say his symptoms have persisted in spite of courses of one or more of the antibiotics. Especially in the case of children, injections of penicillin, or prescriptions for other antibiotics could be dispensed with if the basic allergy were recognized and treated correctly.

2. *The "allergic salute," frequent*

* From the Ear, Nose, and Throat Allergy Clinic of the Eye, Ear, Nose, and Throat Hospital, New Orleans, Louisiana.

hawking, or clearing the nose, and sniffing. This "salute" is frequent rubbing of the tip of the nose with the hands or forearm because of the itching due to allergy. Persons who produce much mucus hawk; those who produce less sniff.

3. *The adenoid facies.* The long face, high, arching palate, and mouth breathing generally charged to enlarged adenoids, are often due to nasal allergy. The adenoid facies may result from chronic nasal blockage from any cause.

4. *Nasal polyps.* At least 99% of nasal polyps are of allergic origin.

5. *Loss of the sense of smell.* Either the presence of polyps or swelling of the mucosa prevents odors from reaching the receptors of the olfactory nerves in the roof of the nose. If the allergy is of long standing and metaplasia has occurred, the anosmia may be irreversible.

6. *Ethmoiditis.* Allergic rhinitis is often accompanied by a low-grade ethmoid infection. This infection will frequently defy all efforts to control the allergy, and dramatic relief ensues when it is recognized and treated.

7. *Headaches.* Recurrent headaches of allergic origin occur most often in individuals who have deviations of the nasal septum causing impaction, or whose turbinates are impacted against the lateral wall of the nose. They can be controlled either by proper allergic management or by the indicated surgical procedures; the latter will not cure the allergy, but the allergic edema will be able to be accommodated without setting up a pain reflex.

8. *Enlarged adenoids* and the allergic diathesis go hand in hand. There may be a regrowth of tissue following adenoidectomy if nasal allergy is uncontrolled. Even though some recession follows allergic control, the remaining tissue may be enough to cause blockage.

CONDITIONS OR FINDINGS REFERABLE TO THE EAR

1. *Secretory otitis media*—The most common middle-ear disease and the cause of more cases of conductive hearing loss than any other condition—is due to Eustachian tube blockage by either enlarged adenoids or edema of the walls, the latter usually of allergic origin. Tinnitus and vertigo often accompany the hearing loss; the latter is reversible if treatment is given early. These patients say they feel as though a drop of water in the ear moves about as they move their head.

2. *Recurrent ear pain* is often due to allergic edema of the Eustachian tube. These attacks appear suddenly, and present no evidence of upper respiratory infection. The diagnosis is usually made on response to treatment with an antihistaminic.

3. *Persistent drainage* after tympanotomy or spontaneous rupture of the tympanic membrane should suggest Eustachian tube allergy, or at least a nasal allergy. The same is true of any case of ear discharge over a long period of time. Both the infection and the primary allergy should receive attention.

4. *Recurrent otitis media.* As a result of nasal blockage, and sometimes enlargement of the adenoids due to the allergy, there is stagnation of secretions in the nasal passages; this predisposes to the development of infection which then travels along the Eustachian tube to the middle ear. Quite frequently there

is an accompanying ethmoiditis.

5, 6, & 7. *Hearing loss, vertigo, and tinnitus* may result from either hyperplasia of the nasopharyngeal lymphoid elements due to allergy or as a result of allergic edema of the Eustachian tubes.

CONDITIONS REFERABLE TO THE THROAT

1. *Speech difficulties in children.* Allergy may cause hearing loss before the child learns to speak, therefore, it may indirectly cause speech disorders.

2. *Recurrent sore throat* prone to affect allergic individuals is present on awakening and disappears as the day progresses; it sometimes returns when evening falls. In many cases much mucoid material is expectorated shortly after arising. The sore throat is produced by mouth-breathing during the night because of nasal blockage.

3. *Postnasal discharge* in the case of allergy is usually excessive, and may be too viscid. Consider allergy as a factor in postnasal discharge; too often an infected sinus is blamed.

4. *Lympoid follicles* in the oropharynx often indicate the presence of a nasal allergy. They are particularly large when there is an allergic postnasal discharge, as though they might be in response to it.

5. *Morning clearing of the nose and throat* causes many allergic individuals to complain bitterly. These annoying secretions are from two sources, those which pool in the nasopharynx overnight, and the viscid pharyngeal secretions which result from mouth breathing.

CONDITIONS REFERABLE TO THE LARYNX

1. *Frequent hawking,* or clearing of the vocal cords. The accumulation of secretions in the hypopharynx irritates the superior laryngeal nerves. The patient responds to this by clearing his throat; he should swallow the secretions.

2. *Hoarseness.* When the hawking is long continued, edema and thickening of those structures ensues, causing various degrees of hoarseness.

3. *Vocal nodules.* If the trauma to the vocal cords is continued, angiomatous polyps and vocal nodules often result.

4. *Voice aberrations.* Should the trauma continue long enough, the individual may try to overcome the vocal cord abnormality by speaking in a register which is either too high or too low.

CONDITIONS REFERABLE TO THE CHEST

1. *Cough.* Though cough is most often thought of as an indication of a chest disorder, there is one type which is often associated with the postnasal discharge due to nasal allergy. This is the "dry" or "tight" cough which begins soon after the patient retires. Patients frequently complain that it is due to an itching or tickling in the throat. Apparently here, too, superior laryngeal irritation is the source of the cough; the irritation may be occasioned either by the postnasal discharge or by mouth breathing.

2. *"Asthmatic bronchitis."* The symptoms of this controversial condition are obviously caused by the passage of air over mucus in the hypopharynx, larynx, and trachea, not to mention the nasopharynx. Some of the mucus originates in the nose. It is mentioned in connection with nasal allergy because symptoms are often dramatically relieved by displacement lavage of the ethmoids when there is superimposed infection.

RAL PENICILLIN: A CHALLENGE ANSWERED

rough the years, the paradox of peni- in has been this—that while injectable ms have become the sheet anchor of ibiotic therapy, oral forms have all too en posed perplexing problems.

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GENERAL CONDITIONS REFERABLE TO NASAL ALLERGY

1. *Irritability* with blockage of the nasal passages due to an allergic crisis. Patients are more irritable than usual.

2. *Behavior problems* in children may stem indirectly from nasal allergy, particularly if the hearing is involved. Hard-of-hearing children feel left out of things and often have difficulty in understanding; they may not keep up well in school work and so may be thought dull. As a result, they attempt to compensate by calling attention to themselves, often running afoul of the behavior code.

3. *Tiredness.* Allergic persons fatigue easily. Allergy implies anoxia, and the anoxic organism does not work with the same efficiency and tires much easier than the normal one.

COMMENTS

Physicians confronted with one or more of these symptoms should have a high index of suspicion of allergic etiology. We can go even further and state that, in the absence of the constitutional signs of infection, they should be thought of as being of allergic origin until proven otherwise. Three out of every 4 patients with chronic nasal complaints suffer with some degree of nasal allergy; this accounts for the high percentage of allergic disorders in what we term the nasal fringe areas. After he has begun to think first of allergy in reference to these symptoms, the physician has a rapid (2-minute) confirmatory test at his disposal—microscopic examination of the nasal secretions using the Hansel staining technic.*

Once the diagnosis is confirmed, therapy can be rationally directed. No longer will the patient be subjected to a variety of antibiotics, analgesics, sedatives, nose drops, ear drops, and liver and iron preparations—nor of vitamins, "to increase resistance." We are all aware of the importance of this, since patient-resistance to many of these medications is becoming as high as their prices and since so many untoward reactions are being reported in the drug therapy field.

* Hansel stain and information concerning its use may be obtained from Lide Laboratories, 634 N. Grand Ave., St. Louis 3, Mo.

A New and More Effective Insecticide

A new insecticide, DDVP, is more potent in killing insects and less toxic to humans and farm animals than many poisons. This Public Health Service's discovery is in the organic phosphorous insecticide field, and its name is made up of the initials of its chemical name — Dimethyl Dichloro Vinyl Phosphate.

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DDVP may prove to be of greatest value where flies and insects have developed a resistance to DDT —one of the problems that has been plaguing farmers and health workers alike for the last few years.

U. S. Department of Health, Education & Welfare

Early Recognition and Treatment of Prostatism

Surgical and medical management restores normal urinary control if there is an early detection of the presence of this disease

W. CALHOUN STIRLING, M.D., *Washington, D. C.*

Prostatism is one of the most common of diseases in men past 50. This disease man shares with members of the lower animal kingdom such as the dog and lion. This urinary obstruction, due to prostatic enlargement, affects one-third of those men. Three out of ten of the latter group will have symptoms of urinary obstruction and will require some form of surgical intervention.

According to the Bureau of Vital Statistics, in 1953 prostatic hyperplasia caused 6,173 dealth, carcinoma of the prostate gland 12,595 deaths. It is only in the early detection of these diseases that a cure may be effected.

Prostatism has an insidious onset, only in that it produces urinary obstruction and back pressure in the upper urinary tract. Urinary retention is the most common finding and produces increased pressure on the bladder, ureters and renal pelves, and is reflected up to the lower nephrons. Glomerular filtration is reduced and subsequent reduction in the renal functional activity. Many of these prostatics suffer from dehydration, nausea, vomiting, fatigue and other evidences of impaired elimination, all caused by impaired renal function.

Prostatism has an insidious onset, so hyperplasia of the gland may be

well advanced before subjective symptoms are noted, which include hematuria, pain on voiding, diminution of the caliber of the urinary stream, difficulty in starting and stopping micturition, with an interrupted flow. Nocturnal and diurnal frequency are characteristic of this obstructive disease, and when an elderly man presents these symptoms a careful urologic examination should be performed.

In the majority of cases digital examination of the prostate via the rectum will confirm the type of enlargement. Better relaxation is obtained with the patient lying on the side or in the knee chest position.

DIVERSIFIED SYMPTOMS

These patients may be conveniently divided into two or three groups depending on the degree of hyperplasia, the amount of residual urine and the severity of the subjective symptoms. In the first group there is mild blood electrolyte or serum imbalance and the residual urine is generally less than 30 cc. As the obstruction slowly progresses, increased pressure in the upper urinary tract ensues with marked elevation of the blood N.P.N. The electrolyte imbalance produces a low-grade uremia. In the second group, urinary retention is greater, and structural damage to the kidneys is common. The intestinal symptoms may be so prominent as to focus attention on this system rather than on the urinary tract. A patient with fluid depletion and electrolyte imbalance should have a thorough urinary study. This examination includes an IV pyelogram, blood chemistry studies, an ECG and other examinations as indicated. In doing the pyelagram, the accompanying cystogram may reveal the degree of residual urine and the type of intravesical protrusion of the prostate. The blood pressure is generally elevated when there is marked urinary obstruction, and an ECG generally reveals evidence of cardiac disability.

When enlargement of the prostate has been determined, the surgeon should immediately proceed to the relief of the obstruction. If the amount of residual urine is high and the patient has marked elevation of the blood N.P.N. an indwelling catheter should be placed in the urethra for drainage. Intravenous perfusion of one of the various electrolyte solutions will combat the azotemia, relieve dehydration and promote drainage.

An occasional patient with persistent infection will require suprapubic drainage. After adequate drainage, the uremic condition subsides and a marked general improvement is noted. With an adequate urinary output assured, one should consider surgical relief of the obstruction. The use of antibiotics has reduced urosepsis to a minimum, so one may tackle cases formerly thought to be inoperable. Patients even in the 7th and 8th decades of life stand the newer type of operaton quite well, and age itself should not be a factor in considering surgery of the prostate.

SURGICAL PROCEDURES

In the hands of the expert, transurethral prostatic resection offers relief in 95% of the cases, and the average death rate is near 1%. Perineal prostatectomy is very effective, allows one to make a preliminary biopsy of prostates suspected of being carcinomatous, and affords dependent drainage. The principal

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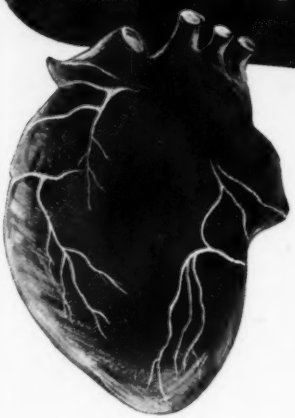

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1. Plotz, N. Y. State Med. Jl. 52:16 (Aug. 15, 1952)
2. Russek and Assoc., 153-3 J.A.M.A. (Sept. 19, 1953)
3. Winsor and Humphreys, Angiology 3:1 (Feb. 1952)
4. Russek and Assoc., Am. Jl. Med. Sciences (Jan. 1955)
5. Biegeleisen, Clinical Medicine, (Oct. 1955)

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drawback to this procedure is the likelihood of impotency resulting in the younger group, and the possibility of incontinence of urine in any group. Retro- and suprapubic enucleation of the enlarged prostate gland are effective in large intravesical enlargements; in patients in whom the urethra will not permit the introduction of a resectoscope, and in those patients in whom crippling joint disease precludes correct placement on the operating table. Retropubic prostatectomy has been successful in the hands of a number of surgeons, but the incidence of osteitis pubis, relative inaccessibility of the gland, and the lack of dependent drainage are against its more general employment.

CANCER

In the treatment of carcinoma of the prostate marked advancement has been made in the early detection and treatment. Statistics reveal that one-half of those patients in whom the malignancy is confined to the prostatic capsule may be assured of arrest of the disease by early radical perineal prostatectomy. This implies early detection of the malignancy by rectal palpation, examination of the urine for cancer cells, biopsy needle or exposure of the prostate through the perineum. Blood phosphatase studies and x-ray studies for evidence of bony metastasis complete the preliminary urologic study.

In 10% of these malignancies radical perineal prostatectomy will arrest the disease and restore normal voiding.

In many cases in which the findings are questionable, a preliminary course of intensive estrogen therapy will convert a non-operative gland into an operative one. The use of preliminary estrogen therapy is another way of testing whether a suspicious gland is or is not malignant, as the shrinkage may be very marked if the growth is malignant.

In the cases of very elderly patients with complete urinary obstruction from prostatic adenocarcinoma, transurethral prostatectomy is very effective and will afford adequate drainage.

Various surgical methods have been tried to reduce adrenal activity, such as bilateral extirpation of the gland, cortisone therapy, and pituitary radiation or excision. A group of cases has been reported in which isotopes were injected in and around the prostate with some degree of success.

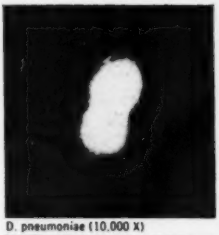
It is remarkable how these old men, more or less reduced to a state of semi-invalidism, respond to prostatectomy. Many of them are restored to health, and regain their former mental and physical vigor. Resumption of sexual activity is a frequent result in the younger group.

BIOPSY SPECIMENS

The only hope of cure in the carcinoma group is in early detection. If a hard nodule or abnormal fixation is noted within the prostate gland, carcinoma must be suspected. Other causes of irregularity or hardness of the prostate are calculi, infections, and an occasional case of sarcoma. These patients frequently have pain radiating posteriorly in the thighs, and elevation of the serum phosphatase. Biopsy by exposure of the prostate through the perineum is the most accurate way of determining the presence of malignancy. Needle biopsy is used and direct

The organisms commonly involved in

Pneumonia



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transrectal biopsy is now being successfully practised. A small incision in the rectal mucosa over the nodule is made and a satisfactory biopsy specimen may be obtained without danger of urinary complications.

Associated pathological complications which frequently accompany prostatic enlargement are vesical calculus, diverticulum and tumors. The former may be handled by crushing the stone, and in tumor of the bladder, transvesical removal of the growth is generally feasible. Diverticulum of the bladder, with poor drainage, should be handled by transvesical surgery.

In conclusion, the primary responsibility rests with the G.P. if he is the first to see these prostatics. Hematuria, difficulty in starting and stopping the urinary stream, nocturia or diurnal frequency of urination in elderly men always demands a complete urinary examination. A digital examination of the prostate in male patients should be routine, and will reveal whether prostatic hyperplasia and/or adenocarcinoma is present. The situation should be discussed with the patient and the incidence of malignancy explained to him. (20% of all prostatic enlargements are cancerous.) By removing the obstruction the patient may be assured of restoration of normal urinary control. Early examination of a questionable nodule in the prostate gland affords the patient the benefit of newer methods of treatment, and may arrest the disease in 50% of the cases if the disease has not spread beyond the prostatic capsule.

Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates

Use of salicylates makes possible lower doses of cortisone and complete avoidance of side effects caused by higher dosages

EDWIN A. BUSSE, M.D., *Tucson, Arizona*

In the treatment of rheumatoid arthritis with cortisone and ACTH response may become evident in a very short time: pain decreases, joint motion improves, rheumatic nodules and enlarged lymph glands decrease in size; the sedimentation rate soon returns to normal, appetite increases and other subjective improvements occur. However, unless the drug is continued indefinitely, relapse occurs, usually within a week or two. This means that the underlying disease process has not been cured, and that the treatment is only palliative.

Dosage of cortisone in most cases is 300 mg. intramuscularly on the first day, 200 mg. intramuscularly from the second day until the fever and local symptoms subside, when the dosage is gradually reduced to the least that will prevent relapse—rarely less than 50 mg. per day. It must be remembered that patients with Addison's disease can be maintained on daily oral doses of 12.5 mg. of cortisone.

UNDESIRED SIDE EFFECTS

Unfortunately, the administration of such large amounts of cortisone or ACTH as are used in arthritis may give rise to a variety of untoward effects which make it necessary to stop the hormone treatment.

Among these side-effects are electrolyte imbalance, awkward mental disturbances, edema, hirsutism in females, and weakness and backache. More important, cortisone at high blood levels acts on the anterior pituitary to stop further production of the body's own supply of ACTH; this lack in turn prevents the pituitary from stimulating the adrenal cortex, with the result that both the anterior pituitary and the adrenal cortical glands tend to atrophy. At this rate the patient has lost much of his small previous capacity to get well, and withdrawal causes "rebound" symptoms. These reasons have caused many endocrinologists to feel that the treatment of rheumatoid arthritis by the usual large doses of ACTH or adrenocortical hormones amounts to the substitution of one evil for another.

BACK TO SALICYLATES

In an effort to meet this situation, some physicians have turned to a classic remedy for rheumatoid arthritis: salicylates. The strong resemblance between the action of salicylate and ACTH, has stimulated research in the mechanism of salicylate action, and a number of papers have been published on the subject.[1] It is shown by experiments on animals that salicylate stimulates the anterior pituitary, which thereupon produces ACTH to stimulate the body's own production of its adrenocortical hormones.[2]

COMBINING SALICYLATE WITH HORMONE

Thus a number of physicians have hit upon the idea of using a judicious *combination* of salicylate with a smaller amount of cortisone to accomplish, with good results and no ill effects, what neither salicylate nor cortisone could accomplish alone.[3,4,5,6] Two were able to maintain arthritic patients on only 25 mg. cortisone daily when aspirin or buffered salicylates were given. The reduced amount of cortisone in such a case acts like a crutch, supporting the body in place of the malfunctioning gland. The salicylate, in stimulating the production within the body of ACTH and adrenocortical hormone, has an action analogous to that of massage of the enfeebled organ.

SALCORT*

A tablet preparation, Salcort®, containing 2.5 mg. of cortisone, 0.3 gm. of sodium salicylate, calcium ascorbate and buffers, has recently been introduced. Aluminum hydroxide gel and calcium carbonate are introduced to relieve some of the gastric distress which occasionally occurs with salicylates,[7] the calcium ascorbate to supply the increased requirement for ascorbate when the adrenal cortex is specifically stimulated.[8] There is also evidence to show that ascorbic acid may diminish the breakdown of corticosteroids,[9] thus tending to prolong their useful action.

Salcort has now been used clinically by several investigators, and their reports have been made available.

1. Hailman, H. F., *J. Clin. Endocrinol.*, 12:454, 1952.
2. Cronheim, G. & King, J. S., Jr., *J. Pharmacol. & Exper. Therap.*, 103:341, 1951.

* Salcort, (*Massengill*) Each tablet contains: Cortisone Acetate, 2.5 mg.; Sodium Salicylate, 0.3 Gm.; Aluminum Hydroxide, Gel, Dried, 0.12 Gm., Calcium Carbonate, 60 mg.

3. Coventry, M. D., *Proc. Staff Meet., Mayo Clin.*, 29:60, 1954.
4. Medvel, V. C., *Lancet*, 2:1102, 1953.
5. Roskam, J. & Van Cauwenberge, H., *Presse Med.*,
6. Spies, T. D., *Postgrad. Med.*, 17:92, 1955.
7. Regan, C., *J.A.M.A.*, 141:125, 1949.
8. Pirani, C. L., *Metabolism*, 1:274, 1952.
9. Bacchus, H., *Endocrinology*, 53:441, 1953.

CLINICAL EXPERIENCE

Among the first to record the results of clinical trials using a mixture of salicylate and cortisone was Spies,[10] who reported the results of treatment of 12 cases of arthritis. He concluded:

"All of these patients have been benefited; none of them has gone into remission. Most of them are still under observation. After the swelling of the joints has gone down and mobility has increased, the pain, stiffness and tenderness subside, and sometimes the S.R. decreases. There have been no noticeable effects on the white blood cells or the circulating eosinophiles. Some patients who previously could not get around are now able to be on their own."

A further series was studied by Plauche[11] at the Arthritis Clinic of Charity Hospital in New Orleans. All but one of 16 patients had osteoarthritis; one had rheumatoid arthritis (active phase). Dosage was 2 tablets, three times daily, in all the cases. Most received Salcort for two months continuously; three received Salcort for four months continuously. It was concluded that the cortisone-salicylate mixture is a valuable method in the relief of pain and control of active rheumatic processes, and helps to relieve the persistent pain and disability of older patients with chronic osteoarthritis.

In another series of 9 patients studied by Warter,[12] unequivocal subjective and objective improvement was brought about in those with early rheumatoid disease, they being maintained on doses of Salcort containing less than 10 mg. of cortisone per day.

10. Spies, T. D., *Personal Communication*, 1954.
11. Plauche, A. C., *Personal Communication*, 1955.
12. Warter, P. J., *Personal Communication*, 1954.

The experience of the present writer consists of 10 cases—five with acute or chronic rheumatoid arthritis, and five with calcific bursitis. All have made excellent progress with this combination of salicylates and steroids. The following cases are typical:

CASE 1. Custodian, aged 52. Chief complaint, low-back pain with nausea for the past two or three months. Gallbladder and gastro-intestinal series all reported within normal limits. X-rays of lumbosacral and iliac areas disclosed acute rheumatoid arthritis. Routine blood count normal but for a 10,000 white count. Sedimentation rate (Wintrobe method) at 15-minute intervals, 2-20-40-45. Placed on Salcort, four times a day; obtained marked relief within three days. Maintained on one tablet four times a day and has returned to work.

CASE 2. Housewife, aged 32. Past history of ulcerative colitis and amebic colitis. Complaint of pain and limitation of right shoulder motion; diagnosis, calcific bursitis. Placed on Salcort, 3 tablets four times a day, with relief of pain and return of full motion within 48 hours. Maintained on Salcort, one 4 times a day, for two weeks. No disability.

CASE 3. Disabled veteran, aged 36, whose first episode of rheumatoid arthritis occurred while he was in the service and led to his discharge. He had an acute flare-up with characteristic spindle-shaped fingers and large wrists. He responded very satisfactorily to Salcort and his sedimentation rate became normal in two weeks and has remained normal. A hypochromic anemia responded satisfactorily to oral iron.

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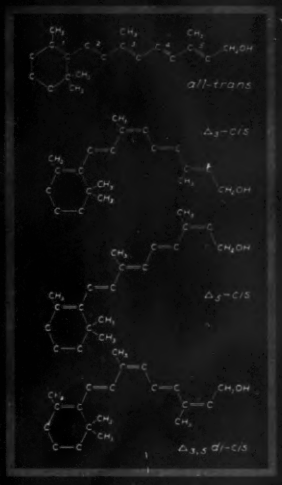

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TOXICITY

Plauche saw no evidence of hypercorticism or salicylism in the Charity Hospital series; Spies found the material to be well-tolerated and safe in a dosage of up to 24 tablets per day, his limit, and he makes a corresponding comment in each of his case reports. Warter found no toxic effects. The only apparent side-effect in the present writer's series consisted of one case of gastric irritation and nausea, which might well have been of psychic origin; the gastritis was easily controlled, with non-absorbable antacids, the nausea with Thorazine.

CONCLUSIONS

1. The background of a cortisone-salicylate combination for the treatment of arthritis is reviewed, and clinical experience with its use in 47 cases is cited.

2. By a judicious combination of the two agents, together with antacid buffers and added ascorbate, it has been possible to bring about a much more favorable reaction in arthritis than with either alone. Salicylate potentiates the greatly reduced amount of cortisone present so that its full effect is brought out without evoking undesirable side reactions.

Ulcerative Colitis

An essentially chronic disease, prone to relapse, which presents difficulties for the physician, patient and the family

J. OGLE WARFIELD, JR., M.D., F.A.C.S., *Washington, D. C.*

The G.P. can readily diagnose ulcerative colitis, and its treatment at his hands is about as satisfactory as at the hands of any specialists—which is to say, generally unsatisfactory. Many of these unfortunate persons after a time seek out a specialist; many are referred on a faint hope that the specialist may be able to do more. The patient needs the continued interest and support of his family physician.

Ulcerative colitis is not common, but it occurs in all climates. It affects the two sexes equally and usually between the ages of 20 and 40 years. The disease is not transmissible, an attack does not confer immunity, and it has not been reproduced in animals.

PATHOLOGY

The disease process often originates in the rectum and progresses in a retrograde manner to involve the entire colon, abruptly stopping at the ileocecal valve. The mucosa becomes red and purple with many ulcers and pseudopolyps. Abscesses develop in the mucosal crypts, rupture at their bases and dissect in the submucosal layer to destroy the mucosal blood supply and produce necrosis, sloughing and ulceration. The ragged, intact, mucosal islands between the ulcers appear as pseudopolyps. Granulomatous lesions do

not develop. The process is exudative with an attempt on the part of the colon to repair the damage. Warren and Sommers[1] reported vascular occlusion wih infarction responsible for the ulcerations in only 10% of their cases, these the more severe ones.

The external appearance of the large bowel remains normal except that eventually there is loss of haustrations, lengthwise shortening, and rigidity. The mesocolon and its regional lymph nodes undergo no particular change.

There is secondary bacterial invasion with absorption of toxic substances which produce changes in other organs of the body. The normal functions of the colon — storage and periodic elimination, reabsorption of water and a few chemicals, and the secretion of mucus — are much altered with resultant deficiencies of water and electrolyte balance.

ETIOLOGY

The etiology remains unknown. Many possibilities have been suggested and explored. It is possible that no single factor may prove to be the trigger mechanism in all instances of the disease, or that a combination of factors are necessary to initiate its onset. Attempts have been made to isolate an infectious organism or virus, but all organisms recovered are considered to be secondary invaders.

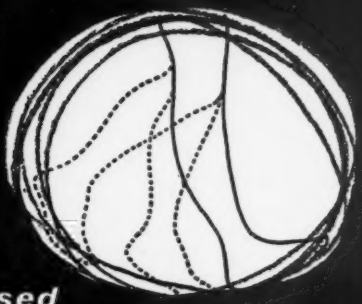
Neurogenic and psychogenic disturbances have often been associated with the onset and exacerbations of normal mental states or unstable personalities. Attempts have been made to establish psychogenic factors as causative agents. Warren and Sommers[1] suggested that emotional disturbances may produce enzymal imbalance which may activate the disease.

Allergies are now believed to affect the mucosa of the large bowel and may possibly play some etiologic role. Other possible causes that have been suggested are metabolic and hormonal disturbances, nutritional deficiencies, lymphatic obstruction, the production of proteolytic and mucolytic enzymes, and the absence of protective enzymes in the bowel wall. Storsteen, Kernohan and Bargen[2] have demonstrated, in cases of ulcerative colitis, a three-fold increase in the number of ganglion cells of the myenteric plexus of the bowel wall. The significance of this finding is not understood.

DIAGNOSIS

The diagnosis should not be difficult with a careful history, physical examination, proctoscopy, and colon x-ray. The onset of the chronic and most common form of the disease may be insidious or acute, and the disease continue over months and years with remissions and relapses. Kirsner and Palmer[3] report that in 50% of cases the duration exceeded 5 years and in 25% it continued for 10 or more years. The onset or exacerbations often follow some emotional disturbance. The patient develops diarrhea, tenesmus and abdominal cramps, and loses weight. The stools are frequent and, at first, watery, later becoming foul and containing blood, pus and mucus. As the symptoms continue there is prostration and irritability. Then there is

1. Warren, S., & Sommers, S. C., *J.A.M.A.*, 154:189, 1954.
2. Storsteen, K. A., *Surg., Gynec. & Obst.* 97:335, 1953.
3. Kirsner, J. B., & Palmer, W. L., *J.A.M.A.* 155: 331, 1954.



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1. Forsham, P. H., et al.: Paper presented at First Internat. Conf. on Prednisone and Prednisolone, New York, N. Y., May 31-June 1, 1955.

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abatement of symptoms. However, with repeated regressions and progression of the disease the patient becomes an invalid.

There is fever, anemia and dehydration; in many cases abdominal distention and tenderness along the course of the colon, and deficiencies of nutrition, especially of vitamins and electrolytes.

Proctoscopy discloses the bloody, muco-purulent character discharge from a mucosa which is red, edematous, granular and pitted with small ulcerations. The proctoscope should be advanced gently under direct vision; with too much inflation of the rectum there is danger of bowel perforation.

Roentgen examination shows the colon outline to be hazy and indistinct early in the disease; later on, the "lead-pipe colon" with loss of haustrations, lengthwise shortening, rigidity and constriction. X-rays may also reveal the presence of a complication such as polyposis.

Additional laboratory studies may be required to rule out other causes of colitis, as amebiasis, bacillary dysentery, tuberculosis, lymphopathia venerum, mercury poisoning, uremia or avitaminosis.

MILD AND FULMINATING COLITIS

In mild colitis the colon involvement is usually limited to the rectum and sigmoid. The bowel symptoms are less severe and there are no generalized toxic effects or systemic complications. The patient remains ambulatory, non-debilitated, and may carry on his occupation.

The colon disease is extensive and active in fulminating colitis, the symptoms severe with marked prostration and toxemia. Dehydration, inanition and anemia are difficult to control. There is great danger of development of systemic and colonic complications which may prove fatal.

COMPLICATIONS

The complications of ulcerative colitis may be, (1) systemic, due to the secondary infection of the colon, toxemia and metabolic changes related to the faulty function of the large bowel; and (2) local complications directly related to the diseased colon. Many systemic complications have been reported—arthritis, endocarditis, nephritis, hepatitis, cirrhosis of the liver, pancreatitis, thrombophlebitis, dermatitis, iritis, amyloidosis, splenomegaly, and, in children with the disease, retardation of physical development. The local or colonic complications are serious and include perforation with peritonitis or abscess, internal fistula, stricture, obstruction, hemorrhage, polyposis, carcinoma, and perirectal abscess with fistula.

Malignant tumor may develop in those who have had ulcerative colitis for eight or ten years; the incidence increases with the duration of the colitis. Kirsner and Palmer[3] found that polypoid changes preceded cancer in 50% of cases. Cancer may develop in several areas of the large bowel almost simultaneously. The signal symptoms of cancer — blood, alteration of bowel habit and obstructive pain—are confused with the symptoms of ulcerative colitis, making the detection of malignant change so difficult as to cause it to be often overlooked.

The association of ulcerative colitis and pregnancy has been reported by Foster and Cohen.[4] In 75% of

4. Foster, O. C., & Cohen, E. S., *J. Internat. Coll. Surgeons.* 19:763, 1953.

such instances the women had the colitis prior to pregnancy. Most of such patients developed exacerbation of the colon disease between the third and fifth month of pregnancy, but the mortality was low and the percentage of women proceeding to term was about the same as for patients without ulcerative colitis. In the remaining 25% of such instances the colitis developed during pregnancy or the puerperium, and in this group the colitis was fulminating and produced a mortality of up to 15%. It was concluded that women wih ulcerative colitis should avoid pregnancy.

TREATMENT

Because of the unknown etiology of ulcerative colitis its treatment has been non-specific and unsatisfactory. It taxes the time and patience of the physician and confidence and cooperation of the patient. In some centers 80% to 90% of cases are treated medically, surgery being reserved for those who develop colonic complications. In other centers surgical treatment has been utilized in 50% of cases.

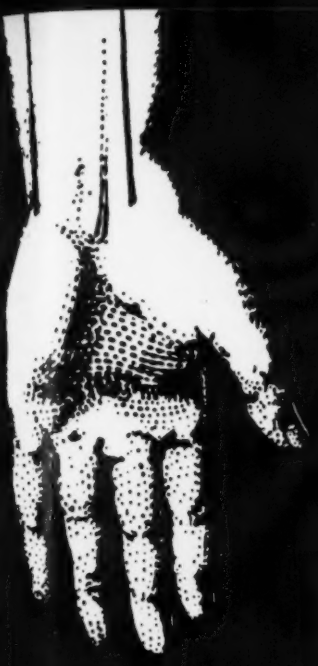
Medical management is symptomatic and must be adapted to the changing stages of the disease. What seems beneficial in one case may not be so in the next one. One antibiotic may lose its effect and have to be replaced by another. Medical treatment may include rest, hospitalization, attentive nursing care, bland and non-irritating diets, sedatives, antispasmodics, narcotics, anticholinergic and antisecretory drugs, chemotherapy and antibiotics, ACTH and cortisone, transfusions, psychotherapy, and measures to combat dehydration, electrolyte loss, undernutrition, and avitaminosis.

Energetic medical treatment should be instituted in the mild types of colitis in an effort to permanently arrest the disease. A low-residue diet, high in calories and proteins, should be supplemented with vitamins. A change in occupational habits may be required to lessen physical and mental strain. Psychotherapy should be used when necessary. Medication may be indicated for diarrhea, anemia and other symptoms. Rectal instillations of sulfa have been used.

In fulminating colitis hospitalization is required to carry out all available measures of treatment. With the use of antibiotics, adrenocortical hormones, transfusions and other supportive measures, a remission can often be brought about. Surgery in these patients is hazardous but in those who do not respond to other forms of treatment it may be life-saving.

SURGICAL INTERVENTION

The surgical treatment is directed at removal of the diseased colon and the establishment of a permanent ileostomy. The techniques have been refined, the mortality lowered, and the results improved. Surgery is being employed in a larger percentage of patients and in the earlier stages of the disease. It gives better results in the more common chronic, debilitating colitis, with periodic relapses. It is best instituted during a remission. Surgery is required in the treatment of such complications as hemorrhage, perforation and obstruction. It should be considered to arrest and improve some of the systemic complications. For the patients with arthritic symptoms, for the ones who have a per-



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preliminary findings,[1] based on the measuring of pituitary ACTH suppression potency of various corticoids, appear to indicate that STERANE is 20% more potent than the cortisone analog, prednisone

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1. Forsham, P. H., et al. Paper presented at First Internat. Conf. on Prednisone and Prednisolone, New York, N. Y., May 31-June 1, 1955.

*Trademark prednisolone

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sistent febrile and toxic course, for those with anemia that do not respond to the usual means of treatment, and for the individuals who are semi-invalids, surgical treatment offers a definite termination of their symptoms and a chance for rehabilitation. Surgical intervention is also indicated in patients with polyposis or in those with long-standing colitis, because of the higher incidence of malignant change. In any colitis patient who does not respond to careful medical management surgery should be advised.

The generally accepted surgical treatment consists of a permanent, end-type, eversion ileostomy, and a complete colectomy often including removal of the rectum. Whether such a surgical program can be carried out in a one-, two-, or three-stage procedure, depends upon the condition and progress of the patient. The surgical mortality has been reduced to 4% to 5%.

Rehabilitation of these patients depends, to a large extent, upon a properly constructed and satisfactorily functioning ileostomy. The technical improvements of the construction of the permanent ileostomy have reduced some of its complications. The end-type stoma, with sufficient protrusion of ileum and a properly fitting ileostomy bag, have reduced skin excoriation and hygienic care of the appliance. A skin opening of exact size minimizes scar contracture around the stomal orifice. Suturing the mesentery to the abdominal wall has prevented prolapse. The lack of sutures in the wall of the ileum and the avoidance of vigorous dilatations post-operatively reduce the chances of fistula-formation. Eversion of the protruding ileum has hastened healing, reduced scarring and improved ileostomy function.

CONCLUSION

Perhaps research may some day disclose the etiology of this disabling disease and thereby a more satisfactory form of therapy may be developed. At present medical measures are non-specific and symptomatic, and surgery sacrifices the entire large bowel and gives the individual a permanent ileostomy which requires meticulous care. With either form of treatment the patient is forced to make considerable economic and social changes in his way of life, and he needs the support and interest of his family physician.

Treatment of Cardiac Arrest

New ways to prevent this complication, preparation for this eventuality, and quick procedures for cardiac massage are given

FREDERICK S. CROSS, M.D., *Cleveland, Ohio*

Although increased attention is being focused on the problem, the incidence of cardiac arrest is not great. Johnson and Kirby report an incidence of one in every 7,500 anesthetizations. At George Washington University Hospital there were only two reported cardiac arrests in 42,636 operations between 1948 and 1952. It is quite possible then for the average surgeon never to see a case in a busy practice; none the less, he should be prepared for such an eventuality.

ETIOLOGY

To assign specific causes to specific cases of cardiac arrest is usually difficult. It is most likely attributable to an idiosyncrasy to the anesthetic agent, reflex vagus action on the heart, hypoxia, and hypotension plus inadequate circulating blood volume.

Cyclopropane increases the tendency toward ventricular fibrillation during anesthesia, and it has been shown that this tendency is enhanced by an increase in circulating epinephrine. Ether, on the other hand, does not predispose to ventricular fibrillation, nor does it sensitize the heart to increased epinephrine. Reflex vagal slowing of the heart may be initiated by irritation in the region of the larynx and trachea, a mediastinal shift or flutter, direct displacement of the heart,

traction on the hilar regions of the lung or a major organ such as the stomach or esophagus, and many other factors. Much has been written lately on the frequency and importance of hypercapnia during certain surgical procedures, especially those requiring opening the chest. It has been shown experimentally that hypercapnia and the subsequent lowering of blood pH enhances the inhibitor effect of vagus stimulation on the heart, predisposing to cardiac standstill.

No elaboration is necessary on the effect of hypoxia, and low circulating blood volume on the action of the heart. The heart is unable to function anaerobically even for very short periods of time.

TREATMENT

General Considerations. Since no more than 50% of the patients survive cardiac arrest, the best treatment is obviously directed toward its prevention. It is impossible to predict in which patient cardiac arrest is likely to occur, for the incidence is as high in good-risk patients as in poor-risk patients. Proper premedication is of basic importance; large doses of narcotics and subsequent respiratory depression must be avoided. Atropine should always be given to minimize the effects of vagal reflexes to the heart. Induction must be smooth and unhurried, and the depth of the anesthesia well controlled. A multiplicity of anesthetic agents is to be avoided. Intratracheal intubation and assisted respiration assure better oxygenation throughout the operative procedure. Frequent blood pressure and pulse determinations are mandatory. Anesthetist fatigue must be prevented. We have had one experience of receiving optimistic blood pressure and pulse readings from the anesthetist when the heart was stopped before our eyes in an open chest procedure. The anesthetist should not go it alone when difficulties arise during the operation. At the first sign of trouble, the surgeon should be notified and additional anesthetic help summoned, the operation stopped, and forces generally mobilized until the difficulty is determined and corrected. The surgeon must allow sufficient time for adequate induction, and be willing to stop the operation for brief intervals at the request of the anesthetist. Tugging on vital organs as the stomach, esophagus, or the lung, is dangerous.

Cardiac arrest takes one of two forms: 1. absolute arrest, in which there is no activity in the heart, or 2. ventricular fibrillation, in which there is movement in the ventricles, but no effective circulation of blood. Clinically, it is impossible to differentiate between the two. It can be done only by the use of ECG, or by direct observation with the chest open. Only three to five minutes can elapse before irreversible damage occurs in the brain. Successful treatment, therefore, is dependent upon immediate recognition, the availability of proper equipment to proceed with cardiac massage, and the efficient execution of a previously planned procedure. The proper drugs and equipment must be available in all areas of the hospital where cardiac arrest is likely to occur such as the operating rooms, the recovery room, the cardiac catheterization laboratory, and possibly in x-ray. Since house officers are usually the most immediately available at

times of emergency, it is mandatory that they completely understand the technique of cardiac resuscitation. In addition, in the interest of his patients, it behooves each and every physician to be adept in the procedure. When cardiac arrest is suspected, time must not be lost in speculating on the diagnosis; nor should ineffectual maneuvers such as intracardiac injection of adrenalin or coramin be tried first. The niceties of a sterile approach are dispensed with, and the incision in the chest immediately made. Lack of bleeding confirms the diagnosis and brisk bleeding negates the diagnosis. During operations in certain areas as the abdomen, the aorta or any large available vessel may be quickly palpated for lack of pulsation to confirm the diagnosis.

Obviously, the greatest chance for success exists in the operating room, especially in thoracic procedures in which the heart is already exposed. There is probably little indication for the increasing use of cardiac massage outside the operating and recovery rooms, since the proper facilities for an adequate job are seldom available. Johnson and Kirby report no successes in those patients dying suddenly on the wards in whom attempts at cardiac resuscitation were carried out.

SURGICAL TECHNIQUE

One must remember that oxygenation of the vital centers depends not only on adequate circulation of blood, but also on adequate respiratory exchange. Either is ineffectual without the other. The technique is simple and can be carried out by anyone, whether or not he has had previous surgical training, so long as some thought has been given to the procedure before the emergency arises.

The thorax is opened in the left 4th interspace, and since there is no problem of hemostasis, one can easily be in the chest in a matter of 15 to 30 seconds. Cardiac massage is begun immediately on entering the chest. The incision then can be made more adequate by the insertion of a retractor and cutting several costal cartilages if necessary. I feel that it is preferable to incise the pericardium and massage the heart directly. The heart is grasped in the palm of the hand with the thumb placed anteriorly and the fingers posteriorly. The heart is then compressed firmly as one would a tennis ball, at a rate of at least 60 per minute. To avoid perforation of the heart by the thumb or fingers, a uniform pressure must be applied. If the heart seems empty and does not fill properly, intravenous fluid, preferably blood, should be given at a rapid rate. Caution must be exercised, however, not to overload the circulation. The effectiveness of cardiac massage can be judged by the production of a pulse and blood pressure, and bleeding from the wound.

While the surgeon is thus restoring circulation, an associate, preferably an anesthetist, should be establishing proper pulmonary ventilation with a tight fitting face mask delivering 100% oxygen, and when the situation is under control and the patient well oxygenated, by means of an intratracheal tube. The acute emergency is now over and it is time to take stock of the situation. Hemostasis may be obtained and the wound draped with sterile towels. If the person carrying out the massage does not feel competent

to go on, an associate may be called for advice or replacement. Not infrequently, the heart will respond readily to a minimum amount of massage at this point, and after satisfying oneself that the response is adequate, the procedure can be discontinued, and the chest closed. If, on the other hand, continued effort is necessary, it must now be determined what type of cardiac standstill exists; i.e., complete arrest or ventricular fibrillation. If the heart is in complete arrest, certain drugs are useful in aiding the massage in restoring a normal rhythm. These drugs should always be part of the cardiac resuscitation setup and be immediately available. Epinephrine is probably the most useful. It is generally used in amounts of 1 cc. of a 1 to 10,000 solution. If this dose is ineffectual, it may be repeated. It must be remembered, however, that epinephrine increases cardiac irritability, and large doses may cause ventricular fibrillation, especially in conjunction with cyclopropane anesthesia.

Recently, we have been finding calcium chloride as effective as epinephrine, if not more so, in the treatment of cardiac arrest. The calcium cation increases the contractility of the heart and prolongs systole. It is used in amounts of 3 to 5 cc. of a 10% solution, depending upon the weight of the patient. The drugs are injected into the left ventricle while the massage is being carried out, so that some of the drug goes directly into the coronary circulation.

DEFIBRILLATION OF THE HEART

If it is determined that ventricular fibrillation exists, rather than complete cardiac standstill, the heart must first be defibrillated before normal rhythm can be restored. Occasionally a heart will go from ventricular fibrillation to normal rhythm following cardiac massage alone. It is essential to oxygenate the myocardium well by efficient massage before the heart can be effectively defibrillated. The Beck-Rand type of defibrillator is an effective instrument. Currents of 1.5 amperes for 0.5 seconds are generally used. If a single shock is ineffective, a series of quick shocks may be. As an adjunct to, or a substitute for, electrical defibrillation, the use of 5 cc. of potassium chloride, in the concentration of 0.5 milleq. per cc., injected into the left ventricle has been effective. The effect of the potassium ion is to relax the heart and when present in excess to arrest the heart in diastole. When the heart has been effectively defibrillated, either electrically or chemically, cardiac massage is continued. This, in turn, may restore the normal rhythm, or calcium chloride or epinephrine may have to be injected as outlined above. One should not allow himself to become discouraged early; it frequently is necessary to continue the cardiac massage for 20 to 30 minutes before spontaneous contractions occur. There have been cases of complete recovery reported after carrying out cardiac massage for periods over an hour.

SUMMARY

It is hoped that the continued awareness of cardiac arrest as a catastrophic complication of surgery and anesthesia will stimulate the stringent application of prophylactic measures in its prevention. If it occurs in spite of all precautions, the

situation must be salvaged with increased frequency by the application of adequate cardiac resuscitative measures, the success of which depend upon immediate decisive action on making the diagnosis, the availability of adequate equipment and drugs, and the swift execution of a previously planned mode of procedure.

Record Dose of Levophed Used in Post-operative Shock

Prolonged shock following surgery was successfully treated with the largest total dosage of the pressor drug Levophed ever administered, over the longest period of therapy. A 53-year-old white woman was being treated in hospital. Acute shock developed 2 weeks after removal of common-duct stones; and whole blood, whole adrenal cortical extract and atropine sulfate failed to effect much improvement.

IV infusions of Levophed (norepinephrine) was administered for 22 days, "the longest duration of use of the drug to date. The 1,452 mg. given is the greatest total dosage."

The initial dose was 4 mg. of Levophed in 1,000 cc. of 5% dextrose in water. It quickly elevated the blood pressure, which had been unobtainable, to 120/90. Concentrations were later increased, reaching a maximum daily dose of 144 mg.

No major side effects were observed. The prolonged course of infusion caused ulceration of the area at the site of the needle due to subcutaneous extravasation of the fluid. Several months following discharge of the patient, however, the area was almost completely healed. Midway during treatment, twitching occurred for an hour but subsided without a change in therapy.

Hall, Buford, *J.A.M.A.* 157:653, 1955.

Gout Now Amenable to Control

This report deals with the use of Benemid in the maintenance therapy of gout. Acute attacks were controlled by the oral administration of colchicine, the intramuscular injections of ACTH gel, or the intrabursal or intra-articular injections of Hydrocortone.

The occasional patient required months of Benemid therapy, 2,000 to 3,000 mg. daily, before the level became normal. The plan of treatment was to start Benemid 1,000 mg. (2 tablets), at 8 a.m. and at 8 p.m.; and then by trial and error, depending on the serum uric-acid level determined at one to 2 months intervals, finally arrive at the maintenance dose of Benemid. A normal serum uric-acid level showed adequate control.

Six of the 125 patients who received Benemid had to discontinue its use because of side effects.

Experience with Benemid indicates prevention in most cases of attacks of gout, and relief of joint pains in patients with tophaceous gout. By individualized doses of Benemid the serum uric-acid level can be maintained at normal, and, thus recurrences are usually prevented. High fluid intake and alkalinization of the urine seem advisable during the early phase of Benemid therapy.

For an acute attack colchicine is the drug of choice. Almost perfect results can be obtained if it is used intravenously and if a low-purine diet is prescribed and eaten.

Foreign Letters (Italy), *J.A.M.A.*, 157, 9:746, 1955.

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Acute Low Back Pain

Hyperextension or unusual torsion is responsible for most cases of this disorder; muscle relaxants and abdominal muscle exercises benefit these patients

ROBERT P. KELLY, M.D., & J. T. JOHNSON, M.D.,
Emory University, Georgia

In the present-day sedentary activities, the abdominal muscles are seldom used for function other than to retain the viscera; yet in sitting, in standing, and in work and play the lumbar spine and lumbosacral joint are constantly subjected to hyperextension. Hyperextension is one of the important precipitating factors in lumbar breakdown in man, including protruded disk, spondylolisthesis, "lumbago," "sacroiliac strain," or for want of a better term, the lumbosacral syndrome. Of the latter group we feel its clinical recognition and simplicity of treatment demand emphasis.

These patients, mostly in the 4th-6th decades, give a history of acute low back pain, described as a "catch" in the region of the lumbosacral joint and usually initiated by an unusual torsion or hyperextension of the lower spine. The precipitating effort may be trivial; the onset of symptoms is frequently sudden and severe, may follow the insult by several hours. Once the attack is started, slight movement may initiate paroxysms of severe pain and spasms of the back muscles, and may radiate out across one buttock. The pain is aggravated by prolonged sitting, standing and recumbency; a general attitude of flexion affords the greatest relief. Greatest pain when, after prolonged sitting, the patient moves to resume the erect

position is a prime characteristic.

As the patient gives the history, he sits squarely on his buttocks or shifts from side to side; in case of protruding intervertebral disk, the weight often is thrust to the opposite buttock. On standing there is spasm of the lumbar erector spinae. Limitation in forward and lateral flexion, pain exacerbated by flexion away from the side of pain, tenderness over one or both lumbosacral joints. Deep tendon reflexes of the lower extremities are normal, and there are no sensory changes. X-rays are usually negative. After several days of persistent back pain, victims of this syndrome may develop leg pain. The picture is characteristic, although back pain from prostatic disease, multiple myeloma and metastatic tumor of the spine sometimes resembles it.

MUSCLE RELAXANTS

Initial treatment is by "hanging" the patient over a table, elevated at one end to prevent sliding backwards and padded to protect the inguinal crease and genitals. An ordinary examining table with both legs of one end supported by a low footstool constitutes the ideal "hanging" apparatus. "Hanging" is for at least 10 minutes, repeated as often as necessary to relieve pain—in some cases every hour. Once the acute back pain and muscle spasm have subsided, it is no longer of value. With unusually severe symptoms, hospitalization is desirable so that skeletal muscle relaxants can be given in addition to supervision and encouragement of the exercises. For a relaxant we have used a slowly absorbed IM tubocurarine chloride pentahydrate (Tubadil) in concentrations of 25 mg. per cc. The average daily maintenance dose has been determined as 1 cc.

ABDOMINAL MUSCLE EXERCISES

Once the patient is convinced of pain relief with the "hanging" maneuver, the abdominal muscle exercise must be started: On floor flexion of the knees, 30 repetitions done in groups of 10 each. Rest of 1 or 2 min. between each group of 10. The initial effort is minimal, more effort with each successive group. For the first 10, the neck is flexed to bring the chin as near to the sternum as possible. In the successive groups, add to 2d an effort to raise the shoulders slightly from the floor; with the 3d this effort is extended, shoulders elevated as far toward the sitting position as possible. The rhythm of the exercise is slow and deliberate. As capacity to perform the exercise improves, the starting effort might be as vigorous as the effort made at first in the final group of 10. In most cases this exercise, carried out daily even after complete disappearance of symptoms, is sufficient to maintain the desired tone of the rectus abdominis muscles.

WILLIAMS LUMBAR FLEXION BRACE

Adjuncts to the exercises are instructions in daily postural attitudes that avoid lordosis as well as weight reduction in the obese patients. There will be some cases in which the exercises will not be feasible due to one cause or another. Here the Williams lumbar flexion brace has been found useful, but should be avoided when the proper rectus muscle tone can be developed.

J.A.M.A., 158:1520-1521, 1955.

Clinical Use of Tace*

The administration of this new compound shows encouraging therapeutic results in prostatic carcinoma and in menopausal patients

H. S. IVORY, M.D., *Point Pleasant Beach, New Jersey*

Chlorotrianisene (hereafter abbreviated C.) is a new compound which causes estrogenic changes in the mammary gland, uterus and vagina, sensitizes the uterus to progesterone, does not alter thyroid abnormalities from thiourea administration and inhibits the gonadotropic hormone production by the pituitary.

Many believe that excessive adrenal activity is a major factor in the progression of prostatic carcinoma. In experimental animals, C. produces little or no adrenal hyperplasia, which makes it unique among estrogens. Therefore, early interest in the clinical application of C. centered around its use in the palliative treatment of prostatic cancer. There are now 307 reported cases of prostatic cancer treated with C., in some cases for over 3 years. The therapeutic response was generally favorable and the drug well tolerated, even in doses as high as 180 mg. per day by mouth.

Twenty menopausal patients aged 40 to 60, each were given 24 mg. daily (2 capsules) for 4 months, then reduced to 12 mg. daily and all patients are still receiving that amount. In all cases the characteristic symptoms of the climacteric were ameliorated, the feeling of well-being was striking. Metrorrhagia and menorrhagia were minimized; the decrease in bleeding is probably a major factor in the good subjective response.

Nine patients were treated for postpartum engorgement of the breasts.

* *Tace* is the trade-mark of the Wm. S. Merrell Company, Cincinnati, for its brand of chlorotrianisene.

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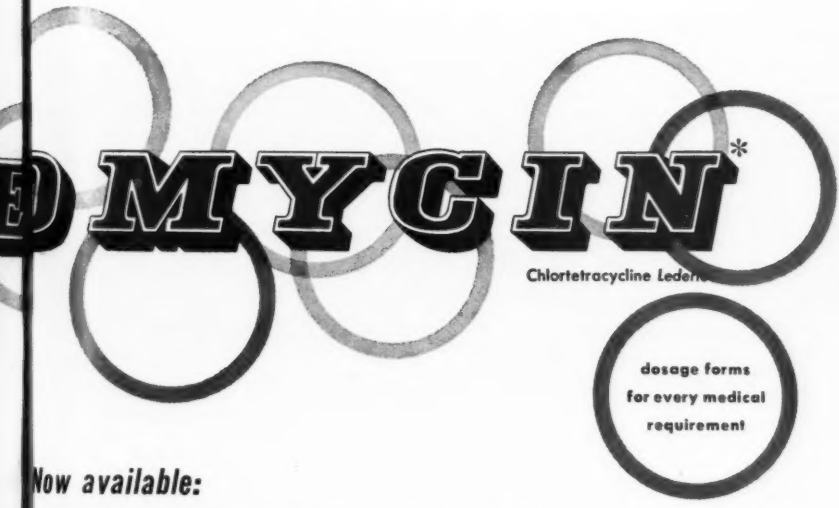

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First 3 days: 12 mg. 4 times daily.
Next 2 days: 12 mg. 3 times daily.
Last 2 days: 12 mg. twice daily.

In 8 of these 9 cases this schedule was adequate; there was no painful engorgement of the breasts. In one symptoms recurred on the 12th day. 12 mg. t.i.d. was given for 2 days and the symptoms were relieved.

In 2 cases loss of shape and tone of the breasts following parturition, C. was given orally 12 mg. daily for 30 days. Improvement began on the 8th day in one case and on the 10th in the other. In both there was a recurrence after discontinuation of medication in one after 6 weeks; in the other after 2 months. A second course of treatment was given to both patients with a return to the normal state.

Two cases of prostatic cancer are being treated with C., one patient, 66, the other 79. The dosage is 12 mg. daily and initial relief of symptoms within 5 to 14 days in both. There was an increase in strength and both patients have become ambulatory; now after 4 months both are free of symptoms.

There have been no side effects.

J. M. Soc. New Jersey, June, 1954.

Breast Cancer: Survival Rates

A recent survey of 1000 cases of cancer of the breast showed 5-year survival rates: entire group, 35.5%; the few patients reporting for treatment within 2 weeks of the onset, 57%; those who delayed a year or longer, 29%. The 5-year survival rate in patients with tumors 2 cm. or less was more than 50%; less than 10% for 9 cm. or more. More than 90% of the group found their own lesions.

Bulletin of Cancer Progress (N.C. Div.), Vol. 4, No. 6, Nov., 1954.

Use of Paravertebral Block in Diseases of the Abdominal Viscera

A detailed explanation of the correct procedure for paravertebral injection of procaine and a description of its advantages

T. M. SCHEININ, M.D., *Helsinki, Finland*

A 0.5 - 1% solution of procaine without adrenaline—5-10cc. per segment is used. No premedication is needed. The injection site is marked 4-5 cm. from the median line at the level of the proper segment. A procaine syringe with a needle 1 mm. thick and 10 cm. long, to which may be attached a depth indicator, entered vertically against the skin to a depth of 3-5 cm., touches the transverse process or capitular articulation. The point is now deflected to the caudal margin of the bone surface. The depth indicator is placed 3 cm. from the skin and the needle directed 30° medially, after first being withdrawn slightly, then pushed deeper until its point touches the body of the vertebra, and is then retracted 1 mm. After aspiration the syringe is removed from the needle and a drop of saline solution placed at the butt end of the needle. If no blood is brought up by the aspiration, if the drop of saline is not absorbed into the pleura, and if no cerebrospinal fluid appears after a moment's waiting, the procaine solution may be safely injected into the paravertebral space. The diffusion of the solution within the small space causes loss of conductivity of the ganglion and its branches, even if the point of the needle does not touch them.

Paravertebral injection of procaine is a safe procedure if correctly

performed and a rapid and effective means of relieving especially cholecysto- nephro- and uretero-genic pain. It is also an aid in differential diagnosis in certain cases of abdominal pain. It provides possibilities of satisfactory symptomatic treatment of patients with gallbladder affections for whom surgical intervention is contraindicated.

Ann. Chir. et Gyn. Fenniae, 43, 3:170-177, 1954.

Mental Retardation

Of the 31 million children in school today, 700,000 are so retarded mentally as to require special assistance. "The greatest handicap that the mentally retarded children face is not their low mental ages but the public's lack of understanding."

It has been estimated that 1 child in every thousand requires full-time care; 4 in every thousand can take care of themselves but are unable to work; and 25 in every thousand can be independent but with curtailed judgment and ability.

"With proper training, either at home or in a specialized institution, many mentally retarded persons can learn to work successfully . . . they frequently make superior employees, particularly in the many tasks which are so simple, repetitive or monotonous that they are dissatisfying to the person of average intelligence."

Postgrad. Med. 17:101, 1955.

Unsolved Problems in the Study and Control of Microbial Diseases

Methods to control the microbial pathogens should be developed so that the damage they cause can be corrected and eventually prevented

R. J. DUBOS, M.D., *New York, New York*

Days lost from work because of so-called minor ailments; or merely the sums paid for drugs, hospitals, and doctors' bills, the toll exacted by microbial pathogens would seem very large indeed.

I would like to consider two examples taken from groups of bacteria commonly regarded as truly pathogenic. Constituents of types of micro-organisms constantly present in large numbers in the intestinal tract and other parts of the human body frequently pass into the general circulation. The microorganisms of the normal flora rarely invade the tissues extensively, but many of them can exert toxic effects that can cause many disease manifestations, ranging from febrile response to profound disturbances of sugar metabolism and vascular pathological conditions. Toxins released from the intestine during many forms of stress probably play a part in surgical and traumatic shock. Or they may cause vascular disturbances that come to light in the small miseries of life and may even result through their additive effects in more profound and lasting pathological conditions.

Now that many of the problems that haunted the medical and lay mind of the 19th century have been solved, it is necessary to formulate new questions more relevant to the times. Scientists publicize widely, and with justified pride, the very low death rates now exacted by the

great killers of the past, but neglect to mention the enormous amount of disease caused by the microbial pathogens and also by micro-organisms that are not usually regarded as pathogenic.

It is unlikely, I fear, that much progress will be made in the near future toward eliminating the micro-organisms that cause the diseases now endemic. Indeed the fact that most members of the population will continue to harbor microbial agents that constitute a threat to health, even though not necessarily to life, must be accepted. Techniques to prevent or at least correct the damage that they cause can certainly be developed. More important, the factors that permit so many individuals to harbor, without manifestations of disease, microorganisms endowed with pathogenic potentialities can be eventually understood. On the basis of this knowledge it might some day become possible to design procedures of metabolic control that will help man live at peace with the micro-organisms which do constitute an inescapable part of his biologcial environment.

J.A.M.A., 157, 17:1477-1479, 1955.

Rauwolfia Serpentina in Essential Hypertension

The trial was confined to out-patients, fully ambulatory, seen every 2 weeks. Every patient had a minimum diastolic pressure above 130 and had been known to us for from 6 months to several years.

In a controlled series of 39 severe cases of hypertension (38 with essential hypertension and 1 with nephritic hypertension) treated for 6 to 20 months with rauwolfia preparations, we found a consistent fall in blood pressure in 67% of cases. In most cases there was a proportionate fall in systolic and diastolic blood pressure, but in several the fall in the diastolic was greater than in the systolic. The diastolic fall was 10-20 in 21%; in 46% greater than 20; in 4 patients it fell below 100.

The presence of papilloedema usually meant that those patients would respond to this drug slightly or not at all.

All patients with angina of effort found it necessary to continue to use nitroglycerin, even though in 1 case the blood pressure dropped to normal.

There was no evidence that only the mild, labile cases respond. Subjective relief and objective improvement in blood pressure levels did not show close parallel.

This substance is worthy of a trial in every case of essential hypertension in which treatment is thought to be necessary.

Locket, S., *Brit. M. J.*, 4917:809-813, 1955.

Hyperglycemia Without Glycosuria

A simplified test that enables an approximate reading of the blood sugar content by means of a color scale is helpful in the preliminary examination

H. L. WOLLENWEBER, M.D., *Baltimore, Maryland*

Mild or early diabetes may be manifested by hyperglycemia without sugar in the urine. The renal threshold usually is normal in diabetes, occasionally it is lowered. Sugar will then be excreted even when the treatment with diet or insulin or both is adequate in all respects.

Many conditions may cause hyperglycemia—acute or chronic sepsis, physical injury, endocrine disease, coronary occlusions, diseases of the liver, advanced chronic nephritis, and muscular dystrophies. Fasting blood sugar values tend to rise with age, but in health they seldom exceed 120 mg. per 100 cc.

Recently, a simplified blood sugar test outfit was submitted for study and was found adaptable for the above two uses, particularly if the simple blood ketone test is used in conjunction with it.

A tablet "A" containing a protein-precipitating agent is placed in a graduated tube containing water, and blood is added. A filtrate is collected in a second tube, to which is added tablet "B" consisting of copper sulphate, sodium hydroxide, sodium bicarbonate, and citric acid. The mixture immediately boils, and after boiling has ceased, the test tube is shaken 4 times. The resulting solution is compared to a color scale and an approximate reading of the blood sugar made. Three distinct color changes enable one to determine levels at 100 mg., 150 mg., and

200 mg. Interpreted in the light of the history and physical examination the test is useful as a preliminary examination of the patient and where more complicated laboratory studies are not immediately available.

Current Med. Dig., 22:93-96, 1955.

Effective Treatment for the Common Cold

In more than 300 cases of the common cold, a solution of one Polycin Soluble Tablet* per 5.0 cc. of tap water was made, making a solution which will retain its potency several days. Patients instill 10 drops into each nostril and assume different positions of the head so as to distribute over nasal cavity and back of throat; and inhale vigorously through the nose several minutes, so as to retain the medication on the affected area.

Repeat at hourly intervals 4 or 5 times. If not totally relieved continue at longer intervals until cured. Infants and young children are treated similarly, using an atomizer. Some adults prefer this latter method, especially where the vocal cords are involved. Excess medication in the throat may be swallowed or expectorated.

Very few required treatment as long as 48 hours, most feel well in 1 to 5 hours. Only 2 requested supportive therapy.

* 8,000 units polymyxin B sulfate and 400 units bacitracin.

Clark, G. A., *Nebraska M. J.* 39:480, 1954.

Protean Manifestations of Periarteritis Nodosa

A rare disease which is quite difficult to diagnose, and for which no effective specific treatment has been discovered at this time

A. B. HENDRICKS, M.D., *Iowa City, Iowa*

Primary periarteritis nodosa, according to Zeek, is a form of necrotizing angiitis, frequently widespread, hence classified as a "multiple system" disease. It is not a common ailment. There is disproportion between the number and severity of symptoms and the disease which is assumed to be the cause. A high index of suspicion is necessary if one is to make the diagnosis. A patient who may or may not appear acutely ill, may show pallor, weakness, fever, tachycardia, weight loss, renal disturbance, gastrointestinal disturbance, hypertension and peripheral neuropathy. A history of drug ingestion is seldom obtained. Fever, peripheral neuritis and hypertension are almost universally seen, and muscle tenderness, eosinophilia, gastrointestinal hemorrhage with pain, microscopic hematuria and congestive heart failure less often.

Of 8 living patients with established periarteritis nodosa, all had cough, hemoptysis, dyspnea or chest pain; and the x-ray findings in all showed either hilar enlargement, parenchymal infiltration or nodules. Of 11 fatal cases, 9 were autopsied. All had one or another of the symptoms mentioned, and of the 10 who were x-rayed 9 showed parenchymal infiltration.

The final diagnosis depends upon the microscopic finding of tissue

taken at biopsy or necropsy. The secondary is not related to the primary type. It represents the pathologic findings which develop in terminal cases of malignant hypertension. The lesions usually develop just before death, and any clinical pattern suggestive of primary periarteritis nodosa is masked by the severe renal disease and the hypertension.

An unawareness of the incidence of the disease and the inadequacy of muscle tissue procured for biopsy are probably the two most important reasons for the infrequency of diagnosis.

There is no specific treatment. A physician, 45, died after 75 days of treatment with a total of 3.62 grains of cortisone. There was complete healing of all arterial lesions. Every organ had been involved, but the most severe degree of reaction had been in the kidneys, heart, liver and mesentery.

J. Iowa M. Soc., 45:75-78, 1955.

Pleural Effusion

A review of 436 cases of pleural effusion revealed that cancer was responsible in half the cases. Congestive heart failure and infections each caused 10%, miscellaneous conditions 12%, and the cause could not be determined in the remainder.

Carcinoma of the bronchus was the commonest neoplasm in the group, almost half. Carcinoma of the breast accounted for almost a fourth, and lymphomas for an eighth.

The detection of malignant cells in the pleural fluid was of great help in establishing a diagnosis. Such cells were detected in more than half the fluids due to carcinoma of the bronchus or of the breast. The presence of blood in the fluid did not affect the frequency with which malignant cells were detected. Repeated examinations should be made when the diagnosis cannot be proved by simpler methods.

Tuberculous pleurisy with effusion was proved in 16 cases by the isolation of the T.B. In 15 of these both cultures for acid-fast bacilli and guinea-pig inoculations were positive. In 1 case the guinea-pig inoculation was positive, while the culture for acid-fast bacilli was negative. This hardly justifies the routine use of the guinea-pig inoculation in the study of pleural fluid.

Leuallen, E. C., et al., *New England Med.* 252:79-83, 1955.

Early Recognition of Primary Lung Cancer

A definite diagnosis can, and should be, established in the great majority of cases before the onset of symptoms

ARNOLD B. VICTOR, M.D., *Brooklyn, New York*

Most important in the diagnosis of carcinoma of the lung is the awareness of its possible presence. Diagnostic methods have been perfected to such a degree that one can expect a positive diagnosis in 75 to 80% of the cases. After a careful history, an ordinary clinical examination (with particular emphasis on the common areas of metastasis, such as supra-clavicular area) is the next step.

There are no signs typical of lung cancer, except when the tumor is advanced. The only chest sign of special significance is unilateral wheezing. X-ray inspection of the chest using both P-A and lateral films is the most valuable diagnostic method for early cancer of the lung. This will show some alteration from the normal in 97 to 98% of cases. A good roentgenologist can make a presumptive diagnosis of carcinoma of the lung in 80 to 85% of the cases. X-ray diagnosis is presumptive. No time should be lost in establishing a definite diagnosis.

Roentgen findings are usually present in the presymptomatic stages of the disease, almost invariably present after the onset of symptoms. Bronchoscopy and cytologic examination of exfoliated cells should be the next steps. A positive result of the cytologic examination of the sputum may serve to supplement the other diagnostic procedures, but it must not decide the diagnosis. A negative result is of no significance. A negative bronchoscopic examination in no way rules out a broncho-

genic lesion; a large number are beyond the bronchoscopic range of vision.

When pleural fluid is present, it should be aspirated and examined. If the fluid is grossly bloody, the lesion is probably inoperable.

The majority of surgeons feel that exploratory thoracotomy is justified in all cases in which there is suggestive evidence of lung cancer, but in which the diagnosis cannot be established otherwise. Even benign-appearing growths should be explored promptly because many of them are malignant.

Regular semiannual chest x-ray films of men over 45 to 50 *might* be of value. One must remember that ⅓ to ½ of primary lesions are hilar in location or otherwise so situated that single P-A films will not reveal them.

"There is almost no chest disease which may not be simulated by lung cancer, and it is essential that the methods of investigation . . . should be applied with expedition if the diagnosis is to be made in time for treatment to be effective. The diagnosis should be made by those methods which upset the patient least, but where the problem persists, all aids must be brought into use without delay. To spend 3 months looking for the T.B. while a carcinoma is spreading and when other methods of investigation will yield a quick answer is negligent, and it is not in a patient's interest to watch a shadow for weeks or months radiologically when a bronchoscopic examination may give an immediate diagnosis."

Dis. of Chest, 27:389, 1955, 67:2, 70-73, 1955.

Use of Gamma Globulin for Control of Infectious Hepatitis In an Institution for the Mentally Retarded

A study of an epidemic of infectious hepatitis in an institution for the mentally retarded is presented. In the course of a 6-month period 157 cases occurred in an institution having 1500 inmates and 233 employees. The attack rate was reduced almost ten-fold after the use of gamma globulin as a prophylactic measure. The fecal-oral route appears to have been the chief means by which infection was spread.

The best means of controlling hepatitis in an institution appear to be prevention of fecal-oral contamination and use of gamma globulin as prophylaxis.

Ashley, Alta, *New England J. Med.*, 252:88-91, 1955.

Use of Quinidine in Clinical Medicine

The actions and reactions of quinidine are noted, and dosages, which must be adapted to individual needs, are recommended

SAMUEL A. WEISMAN, M.D., *Los Angeles, California*

Quinidine is a myocardial depressant. It depresses the sinoauricular node, increases the refractory period and decreases conduction time. It causes a prolongation of the P-R, QRS and S-T intervals. It is antagonistic to acetylcholine, which probably initiates the heart beat. Death during the course of quinidine therapy is often due to either asytole or respiratory paralysis. Toxic reactions to quinidine vary from patient to patient and in even the same patient, at different times, so that dosage must be adapted to individual needs. Some workers have placed emphasis on blood serum levels as a yardstick for dosage. Perhaps in the proper hands and with very good facilities for measurement such a method is safe. However, because of the great variations both in individual toxic reactions and in recommended blood serum peak levels, it would be hazardous to attempt to attain a predetermined level in all patients. Strict attention to blood serum level may leave one unwarned as to impending toxicity. Also, restoration to normal rhythm may take place hours after the peak level has been reached.

Extrasystoles, without evidence of underlying heart disease often yield to 3 grains of quinidine, 2 to 3 times a day for a few days. The ectopic centers are so sensitive to the ac-

tion of quinidine that it may be given even in the presence of organic cardiac disease; 1½ grains twice daily is often effective and not very hazardous. In acute paroxysmal auricular tachycardia, quinidine may not be necessary at all. Pressure on the carotid sinus or the administration of a fast-acting digitalis preparation, such as cedilanid, will often prove successful; or if both fail, the use of 3 grains of quinidine q. 2 hours will usually slow the heart.

AURICULAR FLUTTER

Digitalis often terminates an acute attack of auricular flutter and fibrillation. The flutter may be converted to fibrillation and spontaneously to sinus rhythm. Should digitalis fail, the use of 3 grains of quinidine q. 2 h. will usually succeed.

Ventricular fibrillation calls for heroic measures. It is usually a complication of coronary thrombosis or coronary sclerosis. Quinidine should be given in 3 grain doses every hour. If death appears imminent, it should be given IV, 0.6 gm. of quinidine HCL with 200 cc. of 5% glucose in distilled water, by slow drip over a period of 1 hour, with frequent ECG as a guide. The injection must be stopped immediately when normal rhythm is established or when significant disturbances in conduction occur.

A fibrillating heart is 15 to 80% less efficient than one beating regularly. The administration of a cardiac depressant to an already embarrassed myocardium may aggravate the condition. Therefore, it is necessary to restore the heart muscle to the optimum physiological state before quinidine therapy is started. Digitalis must be administered until the rate is 70 to 80 per min. Once the heart is fully digitalized, a maintenance dose of digitalis must be established and continued. Quinidine is then given in small doses with very gradual increments. At the first sign of toxicity, the schedule of the previous day (or earlier) is reverted to and the rate of increase is slowed. If regular rhythm has not been achieved after a total of 30 grains over a few days, quinidine is discontinued. After normal rhythm is restored, the dose is reduced 5 grains daily until a maintenance dose of 15, 10, 5 or even 3 grains is reached. Patients can be well maintained on such a dosage together with a maintenance dose of digitalis. Digitalis and quinidine are not synergistic in their action.

Rare toxic symptoms are marked pallor, Cheyne-Stokes respiration, convulsions or marked drop in blood pressure.

Minnesota Med. 38:7, 499-500, 1955.

Anesthesia and the General Practitioner

Measures that can prevent or control the emergencies that may occur during spinal or inhalation anesthesia are presented

N. M. GREENE, M.D., *Rochester, New York*

Recent data have shown that there is one death primarily due to anesthesia for every 1,600 administrations. There are 7 million anesthetic administrations annually in this country.

No anesthetic can be considered minor. The safety of a given agent or technic is to a great degree dependent upon the abilities of the anesthetist. One should limit the agents and technics used to those with which one has had the greatest experience.

Vomiting with aspiration is perhaps the foremost preventable cause of death during general anesthesia. Vomiting can occur with any general anesthetic agent. Although infrequent during thiopental anesthesia, when it does occur, it is more dangerous than vomiting during an inhalation anesthetic. No general anesthetic should ever be given without suction apparatus readily available. Never give a general anesthetic to a patient with a full stomach. The normal stomach empties itself in 4 hours, but pain and fear stop normal emptying almost completely, especially in children.

Emergency surgery on a person with a full stomach should be done under conduction anesthesia if possible—nerve block for the upper extremity and spinal anesthesia for the abdomen or lower extremity. If surgery is imperative and it *must* be performed under general anesthesia —either the stomach must be com-

pletely emptied with a large gastric tube, or an endotracheal tube must be gently put in place under carefully done local anesthesia before the patient is put to sleep.

HEMORRHAGIC SHOCK

Second in danger in anesthesia is hemorrhagic shock, most often seen after acute traumatic injuries, severe upper gastrointestinal bleeding, and with certain obstetric complications. In these cases restore blood volume preoperatively by whole blood transfusions. Return of normal pulse and blood pressure is not required; it is necessary to give only enough blood so that the pulse rate is slowing and the blood pressure has risen to 80, before starting anesthesia and surgery. Spinal anesthesia and IV barbiturates are poorly tolerated and best avoided in case of actual or impending vascular collapse. Either cyclopropane or ether, slowly and carefully administered, is the agent of choice in the shock of anemia.

There are many other potentially dangerous situations in anesthesia; one new hazard deserves special emphasis. After cortisone has been given for a period of time, adrenal atrophy may develop. If the cortisone is then omitted, subclinical Addison's disease may ensue. Giving an anesthetic to these patients may precipitate a severe and fatal Addisonian crisis. With the increasing use of cortisone the frequency of such fatalities will rise. The maintenance dose of cortisone used in the reported cases is often small and the duration of its administration surprisingly brief. This type of reaction bears no relation to the type of anesthesia or to the magnitude of the surgery; one of the reported deaths occurred after a bunion operation. All patients should be specifically asked, before they are given any anesthetic whether they have received cortisone in the past.

One who has received daily 25 mg. of cortisone or more for 2 weeks or more within the last 6 months should not be given an anesthetic for elective surgery until he has had 3 IM injections of 200 mg. of cortisone each: one injection 2 days before surgery; another on the day before surgery, and the third immediately prior to surgery. Postoperatively the cortisone should be tapered off gradually, decreasing the dose by 25 mg. daily.

The anesthetist must be aware of the limitations and the contraindications of the various technics and agents. A local anesthetic agent should never be used unless its recognized maximum safe dosage limits are known. Failure to stay within these accepted dose ranges is responsible for most reactions to local anesthetics. Very rarely indeed are these potentially fatal reactions due to true hypersensitivity. If epinephrine is used to prolong the duration of a local anesthetic, it should be recognized that its optimum concentration for this purpose is 1:200,000.

PRECAUTIONS FOR SPINAL ANESTHESIA

Spinal anesthesia is a highly useful technic but one which occasionally meets with patient and even physician opposition, objection which is more often based on emotion than on reason. Accidents do happen with spinal anesthesia, but the vast majority of these are avoidable. Ampuls of local anesthetic agents used for spinal anesthesia must be autoclaved to ensure steril-

ity, not soaked in bactericidal solutions; the risk of invisible cracks in the ampuls, allowing the sterilizing solution to enter, is too great. In addition, the spinal sets used should be prepared so as to be *chemically* clean. They should receive as much, if not more, care than IV sets to be sure that they are free of detergents, pyrogens, and other foreign chemicals.

The anesthetist giving a spinal anesthetic should assume that an inadvertently and dangerously high level will result, and be prepared in advance to treat it. A spinal should never be given unless an anesthesia machine is ready at hand to give immediate artificial respiration with 100% oxygen. If it becomes obvious that the injection is going too high, the head of the patient should *not* be elevated to prevent further ascent. The venous return to the heart must be kept adequate by elevating the legs or putting the patient in slight head-down position. There is no need to fear that the local anesthetic agent will ascend high enough to block either the phrenic nerves or the medullary centers. Respiratory arrest during spinal anesthesia is primarily the result of medullary ischemia secondary to decreased cardiac output and inadequate cerebral blood flow.

USE OF MUSCLE RELAXANT DRUGS

Muscle relaxants, such as curare and succinylcholine, have proved valuable adjuncts, but the initial enthusiasm for their use is now tempered by recognition of their dangers. They should be used only when definite indications exist, certainly never to smooth over an otherwise unsatisfactory general anesthesia. The safety of these agents depends a great deal on the skill of the person administering them, and they should be used only if the anesthetist is trained to do endotracheal intubation under even the most adverse conditions, and only if he is also trained in the technics of fully adequate artificial respiration.

In modern anesthesia, ventilation adequate to maintain normal oxygenation is easily accomplished, but providing gas exchange adequate to prevent CO_2 accumulation is more difficult. Respiratory acidosis is a dangerous entity in an anesthetized patient and one which can be prevented following the use of muscle relaxants only by devoting one's undivided attention to meticulously careful artificial respiration. Unless one's skills and training are such that endotracheal intubation and physiologically normal ventilation can invariably be accomplished, curare-like drugs should not be used.

CUMULATIVE EFFECTS OF TRICHLORETHYLENE

In this brief review only one inhalation anesthetic agent can be considered, and so it may be profitable to emphasize some of the less widely appreciated limitations of trichlorethylene (Trilene, Trimar). This drug is a highly useful inhalation analgetic, but it is unique among inhalation agents in that it is the only one which is not completely excreted by the lungs; 20% of the inhaled trichlorethylene is metabolized, half to trichloracetic acid and half to trichlorethanol. This metabolism takes place extremely slowly; after less than one hour of analgesia with trichlorethylene these metabolic products are detectable in the urine for 6 days. The trichloracetic acid is biologically inert, but the trichlorethan-

ol is a depressant. This means that, unlike any other inhalation agent, there may be a cumulative effect with trichlorethylene. In order to avoid possible accumulation, trichlorethylene probably should not be used for more than 2 hours continuously, and should not be given more often than once a week to any patient. Also, like chloroform and cyclopropane, it sensitizes the heart to the effect of epinephrine so that the combination of the two should not be used for fear of precipitating ventricular fibrillation.

New York State J. Med., 55:16, 2323-2326, 1955.

The Relief of Ascites

Once ascities is diagnosed, measures must be instituted to replace the protein lost by the effusion—a diet rich in protein and fats, with limitation of fluid to 1500 cc. a day is usually adequate. In warm weather it may not be necessary to restrict salts or fluids. In cool weather the patient may fare better if salt is restricted to 1 gm. daily and the fluid intake reduced.

Diuresis may be effected by ammonium chloride, by mercurial diuretics, or by increasing the osmotic blood pressure by infusions of plasma or albumin. Eventually one may have to resort to tapping.

One of the newest methods of controlling effusions in patients with advanced carcinoma is intracavitary treatment with radioactive colloidal gold of patients who have required frequently repeated removal of fluid. The purpose is inhibition of formation of fluid, not destruction of tumor cells.

The Cancer Bulletin, 7:6-8, 1955.

Some Heart Murmurs

If aortic insufficiency is of rheumatic origin, a rumbling diastolic murmur at the apex is likely to be the result of mitral stenosis; if syphilitic, the mitral valve may be assumed to be intact.

The diagnosis of mitral stenosis should be based primarily on the presence of a characteristic murmur and on evidence of enlargement of the left atrium. Usually, mitral insufficiency coexists.

The characteristic murmur is a low-pitched presystolic or early diastolic rumble at the cardiac apex, often over an area no larger than 2 to 3 cm. in diameter, with no transmission beyond. Unless the examination is careful, this murmur may be missed entirely.

Heart Bulletin (N.C. Edit.) 4:33-35, 1955.

Diagnosis of Cancer of the Prostate

The prostate is the second commonest seat of cancer in males. The most important step towards cure is careful, accurate rectal palpation. In a recent report of 100 cases of total prostatectomy performed at Massachusetts General Hospital, cancer was suggested by rectal examination in 94 cases.

With the patient in the knee-chest position, the normal gland is felt as a slightly heart-shaped mass with smooth elastic consistency. Firm pressure may cause discomfort but not pain. The benign enlarged gland is usually uniform, smooth, and homogenous. Size is not helpful in differential diagnosis. Early cancer is typically an area of irregular induration. Discrete nodular induration is typical in 75%; only 15% of cancers arise in areas of bening hypertrophy; 80% begin at the edge of the gland, accessible to the examining finger. In advanced lesions the prostate often is hard, nodular, asymmetrical, fixed, with induration in the seminal vesicles.

Prostatic calculi and inflammatory induration must be differentiated.

Benign hypertrophy does not preclude cancer; obstruction may result from either condition. Carcinoma seldom produces obstruction unless advanced.

Even in advanced stages, the only symptoms may be those caused by metastases. Since the lumbar spine, pelvis, and upper femur are frequent sites of metastasis, common complaints are backache, pelvic pain, and sciatica. Such symptoms in men past 50 should make the doctor suspect cancer of prostate. In pa-

tients over 60 years of age, bilateral sciatica is almost invariably caused by metastatic lesions. Percussion of the involved bones is painful, and x-ray films show typical irregular areas of increased density of bone.

X-rays, blood phosphatase determinations, and biopsy are important for accurate diagnosis. Rectal examination in every patient past 50 will be highly rewarding in the discovery of early lesions for which surgical cure is still possible.

The Cancer Bulletin, 7:3-4, 1955.

Urinary Sugar Other Than Glucose

Galactosemia should be suspected in any infant who shows listlessness, persistent vomiting and failure to gain weight, in association with jaundice and hepatomegaly during the newborn period. The presence of albumin and sugar in the urine of these patients is strongly suggestive of galactosemia. Cataracts leading to blindness, mental retardation, and even death may occur if this condition is not discovered early and treated.

Smith, F. M., *J. Louisiana M. Soc.*, 107:49, 1955.

Simple Palpation to Detect Valvular Incompetence in Patients with Varicose Veins

During recent years, practically every report concerning the treatment of varicose veins has emphasized the importance of a proper high ligation of the long saphenous vein.

If the tip of the index finger is placed just below the inguinal ligament, just mesial to the femoral artery, a "bulge" is easily palpated. In order to detect any valvular incompetence below this level, the tip of the index finger is run slowly down the thigh and leg along the course of the long saphenous vein. If other "blow-outs" exist, a sudden increase of the pressure wthin the saphenous vein will occur below the site of each incompetent valve. The vast majority of patients with varicose veins have their predominant insufficiency at the saphenofemoral junction.

In order to detect valvular incompetence along the *short* saphenous system, the popliteal space is palpated. If short saphenous-popliteal vein insufficiency exists, a "bulge" can usually be palpated in the center of this space. The finger is then run downward along the course of the short saphenous vein in order to detect any further "blow-outs." As a rule, the incompetence in the short saphenous system has its origin at the saphenopopliteal vein junction. Therefore, at the time of surgery, it is important to ligate the short saphenous vein flush with the popliteal, after all adjacent branches have been divided.

Occasionally there will be an atypical "blow-out." This can be easily detected by inspection and palpation of the thigh and leg. We have the patient stand for several minutes so that the veins may assume their greatest prominence. The tip of the index finger is then run along the course of the long and short saphenous veins. Each site of valvular insufficiency is localized and accurately mapped out. Accurate localization of all perforators can be carried out without the use of any further diagnostic tests.

Nabatoff, R. A., *J.A.M.A.*, 159:27-28, 1955.

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Breaking the Sound Barrier and Its Effect on the Public

Airplanes flying faster than the speed of sound generate a shock wave that may be transmitted to the ground, where it is heard as an explosive boom. Shock waves of this type can cause minor physical damage to windows, doors and other parts of buildings, and adverse psychological effects in exposed populations, such as the startle reaction, fear and panic tendencies. Restriction of supersonic flying to unpopulated areas and to high altitudes prevent public exposure.

In the general aspects of aviation noise, both military and civil aviaton are confronted with a problem difficult to control. Annoyance, anger and fear, as well as real or imagined economic loss, are the public reactions. To meet the problem, the Air Force supports an extensive research and development program aimed at determining the effects of aviation noise on individuals and groups, and at improved methods of noise suppression and control.

Tablot, J. M., Col., M.C., *J.A.M.A.*, 158:1508-1512, 1955.

Diabetes and Pregnancy

All glycosuria of pregnancy should be interpreted in the light of glucose tolerance tests repeated in each trimester of pregnancy. The glucose tolerance test should be repeated in the last trimester if negative earlier in any pregnant woman with glycosuria, obesity, or a history of previous intra-uterine death or of birth of a baby over 9 pounds.

Beaser, S. B., *New England J. Med.*, 251:737, 1954.

Double Chancre in the Puerperium

Patient was a married woman, aged 32, first seen 6 weeks after normal delivery of a full-term living infant. She was complaining of vulval discomfort, and had a small ulcer on the left labium majus and a few shotty glands in both groins. Examination of the cervix revealed an area of necrotic ulceration of the posterior lip.

Dark-ground examination of both the vulval and cervical ulcers was negative, as was the Wassermann and gonococcal complement-fixation test.

She was admitted to hospital where 4 further dark-ground examinations from both lesions proved negative and swabs showed mixed growth of organisms only. Ten days after admission a piece of the cervical ulcer was removed for examination because of the possibility of carcinoma; this showed marked epithelial hyperplasia and intense inflammatory changes. Five days later the Wassermann became strongly positive, but lumbar puncture showed normal cerebrospinal fluid. She thereupon received a course of penicillin treatment and both the cervical and the vulval ulcer healed rapidly.

The baby was well and serologically negative, husband showed a strongly positive W.R. He had been treated for syphilis while serving with the Army in Korea but had been discharged "cured." The husband was almost certainly reinfected after his return to the British Isles and infected his wife either very late in pregnancy or early in the puerperium.

Bancroft-Livingston, G., *Proc. Roy. Soc. Med.*, 48: 455, 1955.

NEW PHARMACEUTICAL PRODUCTS

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A vasodilator, dietary supplement and metabolic stimulant. Each tablet contains 59 mg. of nicotinic acid, 100 mg. of ascorbic acid, 5 mg. of riboflavin, 10 mg. of thiamine mononitrate, 1 mg. of pyridoxine and 2 mcg. of vitamin B_{12}. *Indications:* peripheral vascular disorders, Meniere's syndrome, bursitis, tension headache, and neuralgia. *Dosage:* one tablet three times daily before meals. *Supplied:* bottles of 100 and 500 tablets.

Tarcortin *(Reed & Carnrick)*

A dermatologic cream containing a synergistic combination of Tarbonis® (5% coal tar extract in a hydrophilic base) and hydrocortisone (0.5%). *Indications:* chronic and subacute dermatoses such as nummalar eczema, hand eczemas, atopic eczemas, seborrhea, etc. *Administration:* apply sparingly and massage gently into affected areas. *Supplied:* 7 gram tubes.

Urosulfon *(C.S.C.)*

Each tablet contains 0.5 gm. of sulfacetamide. *Indications:* urinary tract infections. *Dosage:* 2 tablets three times daily after meals. *Supplied:* bottles of 30, 100, 250 and 1,000 tablets.

Stimavite Tastitabs *(Roerig)*

Appetite stimulant for children and adults containing vitamins B_1, B_6, and B_{12}, ascorbic acid and 1-lysine, an amino acid which improves protein quality. *Indications:* underweight, as an aid to growth and development in children, to shorten convalescence time, and in conditions needing B_{12} therapy, excluding pernicious anemia. *Dosage:* one tablet daily. *Supplied:* bottles of 20 tablets.

Vermizine *(Chicago Pharmacal)*

Strawberry-flavored syrup containing in each cc. piperazine gluconate, equivalent to piperazine hexahydrate, 100 mg. *Indications:* pinworms and roundworms in children and adults. *Dosage:* according to scale based on body weight of patient. *Supplied:* 8 ounces, pint and gallon bottles.

Achromycin Liquid Pediatric Drops *(Lederle)*

A palatable, ready to use preparation of Achromycin tetracycline for infants and children. Each cc. (20 drops) contains 100 mg. of tetracycline HCl. *Administration:* orally or with small quantities of milk, water or fruit juices. *Supplied:* 10 cc. dropper bottles.

Levsin Sulfate *(Kremers-Urban)*

An anticholinergic agent for relief from smooth muscle spasm. Contains 0.25 mg. of specially purified levohyoscyamine. *Indications:* pain and spasm in gastro-intestinal spasticitis, pylorospasm, peptic ulcer, biliary colic and dysfunction and dysmenorrhea. *Dosage:* 1 or 2 tablets at four hour intervals as required. For peptic ulcer, one tablet 30 minutes before each meal and at bedtime. *Supplied:* bottles of 100, 500 and 1000 tablets.

Cortrophin-Zinc *(Organon)*

Provides therapeutic ACTH activity for periods of from 1 to 3 days. It is a fine aqueous suspension, each cc. of which provides 40 U.S.P. units of corticotropin with zinc hydroxide (2.0 mg. of zinc) for repository action. *Indications:* shock, rheumatoid afflictions, allergic reactions, and skin and eye diseases. *Dosage:* as directed by physician. *Supplied:* 5 cc. vials.

Achromycin Nasal Suspension *(Lederle)*

A combination of the broad spectrum antibiotic with a nasal decongestant and anti-inflammatory agent. Each cc. contains 3.75 mg. of tetracycline HCl, 2 mg. of Hydrocortisone Acetate and 0.125% Phenylephrine HC. *Indications:* congestion and inflammation of the nose associated with sinus conditions and upper respiratory infections, and for the control of secondary infections accompanying the common cold, hay fever and other allergies. *Supplied:* 15 cc. plastic squeeze bottles.

Niphylline *(Paul Maney)*

An oral vasodilator containing 100 mg. of neothylline (Dihydroxypropyl Theophylline) and 10 mg. of pentaerythritol tetranitrate. *Indications:* angina pectoris, asthma, cardiac dyspnea and oliguresis. *Dosage:* adult, 1 or 2 tablets three to four times daily. *Supplied:* bottles of 100 and 1000.

Vi-Trins *(U. S. Vitamin)*

Provides therapeutic dosage of hematinic nutrients fundamental to the maturation of abundant red blood cells and hemoglobin for comprehensive, lasting response in all anemias which can be treated nutritionally. *Indications:* macrocytic anemias (pernicious anemia; due to sprue, pellagra, pregnancy, malnutrition; megaloblastic anemia of infancy); microcytic or normocytic anemias: (due to blood loss, decreased blood formation, pregnancy, surgery, illness, convalescence, etc.); mixed or nonspecific anemias. *Dosage:* 2 capsules daily in divided doses. *Supplied:* bottles of 50 and 100 capsules.

Sterane *(Pfizer)*

Each oval-shaped, scored tablet contains prednisolone, a synthetic crystalline steroid, an analog of hydrocortisone. *Indications:* rheumatic arthritis and such conditions as bronchial asthma, pemphigus vulgaris, acute disseminated lupus erythematosus, exfoliative dermatitis, ulcerative colitis, periarteritis nodosa, scleroderma and dermatomyositis. *Administration:* orally. *Dosage:* as directed by physician. *Supplied:* bottles of 20 and 100 tablets.

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p. 1188

87. **Bremil**
Infant food
insert

88. **Peritrate**
Vasodilator
insert

89. **Noludar**
Sedative, hypnotic
insert

Use of Intravenous ACTH in Status Asthmaticus

407 patients with bronchial asthma were admitted to hospital over a period of 31 months. Of this number, 14 were refractory to the ordinary measures for the treatment of status asthmaticus. In these, intravenous ACTH was given by slow drip for 2 to 3 days, changing to cortisone for 5 to 7 days only. Initially, 7 of the 14 obtained benefit within 12 hours, 5 within 24 hours, and one in 48 hours; one derived no benefit. 2 of the patients received ACTH again with decreased effectiveness, and 2 repeatedly with a satisfactory response. All of the patients had the usual diagnostic procedures, desensitizations, and any surgical procedure deemed necessary.

E. H. Johnson, *Wisconsin M. J.*, 53:537, 1954.

Changes in the Treatment of Tuberculosis

Collapse therapy has been almost abandoned. During the past 2 years the principle of strict rest in bed has also been abandoned except for toxic patients and those under orthopedic treatment. All are allowed moderate exercise including full bathroom privileges. Much more time must be spent in the instruction of the patient regarding the problems of his disease as it relates to himself and to his family and community.

With chemotherapy, however, it has been possible to shorten the hospital stay for the intelligent and cooperative patient by outpatient treatment with drugs, given under the supervision of the patient's private physician.

The patient returns to the sanatorium periodically for laboratory studies including the culture of gastric specimens. Three months after the end of treatment the patient is again hospitalized for such studies.

Hedberg, G. A., *Med. Clinics of N. A.*, July, 1954.

Chlorpromazine (Thorazine) in the Relief of Intractable Pain

Sadove, et al. concluded that Thorazine® has proved useful for relieving pain in patients who can no longer be made comfortable with large doses of narcotics and sedatives alone. When given with narcotics or sedatives that previously proved ineffective for relieving pain, 22 of 28 patients obtained satisfactory relief from severe abdominal, bone and neuritic pain caused by malignant lesions.

J.A.M.A., 155:626, 1954.

Nickel Poisoning

Clinical observations are reported on 36 persons accidently exposed to the vapors of nickel carbonyl. Two patients died and many of the others were critically ill. Increase in the concentration of nickel in urine may be correlated with the severity of exposure. Dimercaprol (BAL) was administered to 32 exposed persons, 31 of whom survived.

The administration was attended by an increased excretion of nickel in urine and a marked decrease in the concentration of nickel in blood. It is believed that the dimercaprol was beneficial in practically all cases and may have been lifesaving in several.

F. W. Sunderman, *J.A.M.A.*, 155:889, 1954.

For Nutritional Anemia in Infancy and Childhood Iron and Ascorbic Acid

The oral administration of iron in nutritional anemia of infancy and childhood is as efficacious as other types of treatment. Apparently ascorbic acid increases the absorption and to some extent aids the utilization of orally given iron.

Dosage: vitamin C, 500 to 750 mg., divided into 3 equal doses given ½ hour before meals; 20-25 mg. (⅜ gr.) of elemental iron per kilogram (2.2 lb.) per day in 3 to 4 divided doses between meals.

M. K. Gorten, et al, *Journal of Pediatrics*, 45:1, 1954.

Safe and Practical Anesthesia in Obstetrics

Generally speaking, heavy sedation and/or anesthesia with the barbiturates have no place in obstetrical anesthesia.

One of the most important advancements of recent years has been the development of Nalline as an antagonist to the depression caused by narcotics.

Saddle block and light nitrous oxide-ether anesthesia are advocated as relatively safe and practical anesthetics even in the hands of the less experienced.

R. E. Spencer, *North Carolina M. J.*, 15,585, 1954

Sanatorium-Home Treatment of Tuberculosis

Treatment of tuberculosis should be vigorous *immediately* after diagnosis. For this reason home care, when advisable, should most appropriately follow an initial, intensive period of sanatorium treatment. We select as early as possible those patients who do not require prolonged sanatorium residence, and make such arrangements as are feasible for continued treatment at home. In this way, by utilizing all facilities—those in the home and those in the sanatorium—we can hope to take another step forward toward eradication of tuberculosis.

Lynn Johnsen, et al., *North Carolina M. J.*, 15:533, 1954.

A Simple Means to Control Nosebleed

A padded, spring-type clothespin maintains a constant and even degree of pressure to control bleeding. The clothespin is placed over the dorsum of the nose or below the lobules externally, and not intranasally. This is more effective in some instances than packing the nose intranasally.

In cases of recurrent bleeding, the patient can always carry a clothespin with him and apply it until he can reach the doctor's office. Those who have immediate charge of children, in whom nosebleed is relatively so common, can easily have at hand this familiar household implement.

A. P. Seltzer, *Arch. Otolargyng.*, Feb., 1954.

Neomycin Therapy of Diarrhea Caused by Shigella and Salmonella

One-half gm. tablets of Mycifradin sulfate (containing 0.35 gm. of neomycin base) were used. This antibiotic acts upon the majority of the Gram-negative and Gram-positive bacteria in the intestinal tract; toxic symptoms rarely occur. Dosage was of 50 mg./kg. per day in 6 divided doses given q. 4 hours, continued for 5 days.

Treatment was started not later than the 4th day of the illness. Neomycin was added to the regimen: fluid diet for 6 to 16 hours; special fluids orally or IV according to degree of dehydration. The preferred special fluid was a mixture of 5% glucose and Hartmann's solution. Feeding was established gradually, according to the age and the physical condition of the child.

The action of neomycin was studied in 25 cases of diarrheic syndrome — 15 caused by Salmonella, 10 by Shigella, and was favorable in the treatment of this syndrome in all but 4 cases.

The general physical condition of the patients played an important part in the rapidity of the response to treatment.

Estela Ponce De Leon, *Antibiotic Med.* 1:20-22, 1955.

Sulfas for Bacterial Meningitis

Meningococcal meningitis occurs usually in late winter and early spring. In uncomplicated, promptly-treated cases, the mortality rate is under 5%, but the overall, average rate is 10%. Most doctors rely primarily on sulfonamids, particularly sulfadiazine, in treating this disease.

Therapeutic Notes, 62:6-9, 1955.

Noradrenaline

Noradrenaline is superior to adrenalin to restore the blood pressure, because it does not accelerate the heart. It constricts the vessels in the muscles as well as those in the skin and viscera, whereas adrenalin dilates those in the muscles. It is to be given by IV drip; its effect can be increased or diminished at will. A constant watch on the blood pressure must be kept. Also an infusion of noradrenaline should not be terminated abruptly.

Its use in 6 patients whose systolic blood pressure had fallen to levels between 45 and 80 and who seemed about to die, produced in each prompt clinical improvement. However, 2 who had had previous infarctions died within 3 and 4 days, the others recovered well, and the lives of 3 were saved by the treatment.

Brit. M. J. 4918:896, 1955.

Antibiotics and the Staphylococci

The range of antibiotics to which the staphylococci are acquiring resistance now includes penicillin, streptomycin, the 3 tetracyclines and erythromycin, and some strains resistant to chloramphenicol are being encountered. It may be assumed that the erythromycin - resistant strains are also resistant to carbomycin.

These staphylococci presumably originate in the first instance by passage through patients who have been treated with these various antibiotics and the resistance pattern of the staphylococcus seems to vary with the practices of the particular hospital with respect to the choice of antibiotics and the frequency of use. The use of antibiotics in combinations in individual patients has helped to delay the occurrence of this phenomenon.

Finland, Maxwell, *Antibiotic Med.* 1:1, 3, 1955.

Curettage For Plantar Warts

The field is cleansed with 70% alcohol and dried, sprayed with ethyl chloride and, when blanching occurs, a 26-gauge ½ in. hypodermic needle is thrust under the wart and 2 cc. of 1% procaine without epinephrine is injected slowly.

When anesthesia is complete, the keratinized surface of the wart is removed and the globules of verrucous tissue are shelled out with a small curette, leaving a cavity with overhanging edges, a glistening fascial floor and firm side walls. Overhanging edges are removed with small curved scissors and the wound is filled with 5% mercurochrome. Bleeding is controlled with a pressure dressing held in place by adhesive.

The patient removes the bandage the following day, and applies an antibiotic ointment and a simple dressing twice a day until healed.

Of the 155 warts treated in this manner, 140 were reported cured; 15 recurred.

Seale, E. B., et al., *Ciba Reports*, 23, Nov. 17, 1954.

Treatment of Hyperthyroidism With Radioactive Iodine

The results of radioactive iodine treatment for hyperthyroidism in 107 adequately-followed patients are presented. 75 patients were cured after one treatment, 26 required 2 or more treatments to achieve a remission of signs and symptoms. 4 cases are described as failures. There were 4 cases of post-treatment myxedema.

It is the authors' belief that, in the usual case of hyperthyroidism, I^{131} therapy is the most conservative therapy and the treatment of choice.

W. M. Nicholson, et al. *North Carolina M. J.*, 15:544, 1954.

Radioactive Iodine (I^{131})

Fifty to 66% of patients having intractable congestive cardiac failure or severe angina pectoris from reduction of thyroid function with I^{131} may be expected to show improvement for from 9 months to 3 years; the remainder will not be improved. From 2 to 3 times the therapeutic dose for hyperthyroidism is required, since the normally functioning gland takes up less I and is less radio-sensitive than the hyperfunctioning gland.

The purpose of treatment is to reduce thyroid function to low levels without the shock of an operation, and then to maintain the patient just above the myxedema level with desiccated thyroid. No complications of any significance have been reported, and the cost of the treatment is low.

R. S. Clayton, *Texas State J. Med.*, 50:743, 1954.

Peptic Ulcer Management With Piptal®

A new synthetic anticholinergic compound, Piptal, was investigated for its effectiveness in the management of gastroduodenal ulcers and hypertrophic gastritis. With dosages of 5 to 10 mg., q. 4 to 6 hours, relief of pain was achieved in 35 of 37 patients. In none of the 37 cases were any side-effects attributable to the drug. The emptying time was prolonged in all cases from ½ to 1¼ hours.

In some cases gastric volume and free acid were markedly decreased, in other cases there was little change. The rapid relief of pain achieved in these cases is probably due to effective spasmolysis, and to a lesser degree to depression of gastric-acid secretion.

Riese, J. A., *Gastroenterology*, 23:223-227, 1955.

The Results of Acetyl Gantrisin Therapy in 100 Patients With Urinary-Tract Infection

Gantrisin is a well established sulfonamide, highly soluble. It is a satisfactory urinary-tract antiseptic, and is extremely well tolerated. A recently synthesized acetylated derivative of Gantrisin was submitted for clinical evaluation.

100 patients with urinary-tract infection were treated with an acetylated Gantrisin derivative. There was either a cure or satisfactory relief following administration of the drug in 91% of the cases. The 2 febrile reactions abated when the medication was stopped.

Acetyl Gantrisin is an effective and safe drug for use in the treatment of urinary-tract infection.

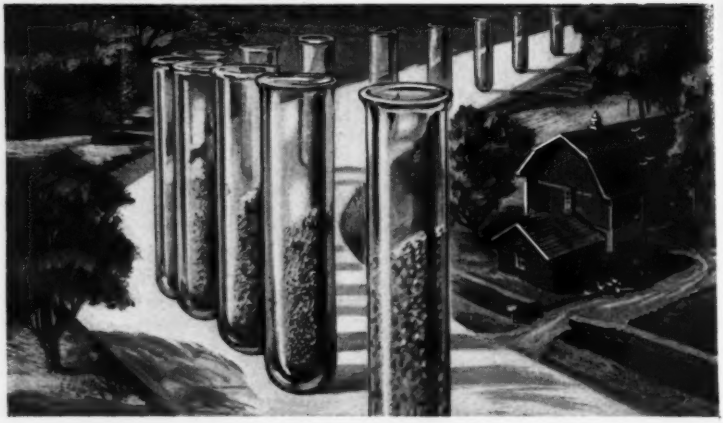
Garvey, F. K., et al., *North Carolina M. J.*, 16, 2:63-64, 1955.

Private Practice Use of Radio-Isotopes

Radio-Isotopes have shown great value in the diagnosis and treatment of certain diseases. Current technics permit the use of certain of these isotopes in the office *following proper authorization. Preliminary training must be approved by the Isotope Division of the Atomic Energy Commission.* Iodine^{131} has been shown to be the isotope of most practical value for office use up to the present time. In the opinion of many authorities, radio-iodine uptake tracer technics are much more accurate than the BMR in determining thyroid function. The treatment of choice for uncomplicated hyperthyroidism is radio-iodine. P^{32} has definite, but limited, value in the treatment of certain blood dyscrasias.

R. J. Gross, *J. M. Soc. New Jersey*, 51:453, 1954

SECOND REPORT



LECITHIN RESEARCH—AT THE BEND OF THE ROAD

The Therapeutic Usefulness of Lecithin — a natural phospholipid

Because lecithin, a natural, edible food constituent, is an excellent emulsifying agent its application in diseases characterized by disturbed fat absorption and metabolism is logical. Research has proved its value in facilitating intestinal absorption of fats and fat-soluble substances such as vitamin A.[1-5] For this reason it suggests itself as worthy of trial in treating underweight and steatorrheal diseases (sprue, celiac disease, etc.).

Encouraging results were also achieved in the management of psoriasis, together with dietary and topical measures,[6] and in fatty livers.[7] In the treatment of diabetes, lecithin together with vitamin E has reduced insulin requirements in certain patients.[8] Research on its potentially useful role in the more complicated forms of deranged lipid and cholesterol metabolism — as encountered in essential hyperlipemia, idiopathic familial hypercholesteremia, xanthomatosis, diabetes, etc. — is now being actively conducted.

An excellent source is Glidden's "RG" Oil-free Soya Lecithin, a highly purified extract containing a minimum of 95% phospholipids. It is packed in a specially designed 8 oz container to maintain its purity and freshness and is available at your drugstore.

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Literature available on request.

Bibliography: 1. Adlersberg, D., and Sobotka, H.: J. Nutrition 25:255 (March) 1943. • 2. Adlersberg, D., and others: Gastroenterology 10:822 (May) 1948. • 3. Adlersberg, D.: New York J. Med. 44:608 (March 15) 1944. • 4. Adlersberg, D., and others: Am. J. Digest. Dis. 16:333 (Sept.) 1949. • 5. Augur, V.; Rollman, H. S., and Deuel, H. J., Jr.: J. Nutrition 33:177 (Feb.) 1947. • 6. Gross, P., and Kesten, M. B.: New York J. Med. 50:2683 (Nov. 15) 1950. • 7. Schettler, G.: Klin. Wchnschr. 30:627 (July) 1952. • 8. Dietrich, H. W.: South. M. J. 43:743 (Aug.) 1950.

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BOOK REVIEWS

Psychiatry and the Law

edited by Paul H. Hoch, M.D., New York State Psychiatric Institute; College of Physicians and Surgeons, Columbia University, New York City; and Joseph Zubin, Ph.D., New York State Psychiatric Institute; Department of Psychology, Columbia University, New York City. The Proceedings of the 43rd Annual Meeting of the American Psychopathological Association, held in New York City, June, 1953. Grune & Stratton, New York. London. 1955. $5.50

It is said that the gap between legal and psychiatric appraisal of crime has been narrowing, and that it is hoped that out of symposia such as this a deeper understanding and cooperation between the law and psychiatry will emerge.

The Practice of Dynamic Psychiatry

by Jules H. Masserman, M.D., Professor of Neurology and Psychiatry, Northwestern University, Chicago. W. B. Saunders Co., Philadelphia. London. 1955. $12.00

A paragraph from the preface: "It is the author's conviction that psychiatry is, or should become, acquainted with the infinite resources and nuances of the English language, and that eventually this will eliminate the currently unscientific and sometimes barbaric lexicon in the field. However, since some technical terms must be used, they are nearly always defined immediately in the text, or reference is made to their definition in the glossary of the *Principles.*"

It's bound to be a worth-while book. A psychiatrist with that much sense could write no other sort of book. I am going to keep my copy. I advise every reader of this review to buy one for himself.

Functional Endocrinology: From Birth Through Adolescence

by Nathan B. Talbot, M.D., Edna H. Sobel, M.D., Janet W. McArthur, M.D., and John D. Crawford, M.D. Harvard University Press, Cambridge, Massachusetts. 1952. $10.00

This book, written for practitioners, students and investigators of medicine and surgery who seek practical information concerning the actions of endocrine system in health and ordinary disease, and the management of diseases of the endocrine organs as they occur in young people, appears to be a highly successful undertaking.

Bone and Bones: Fundamentals Of Bone Biology

by Joseph P. Weinmann, M.D., and Harry Sicher, M.D., D.Sc. Second edition with 302 illustrations. The C. V. Mosby Company, St. Louis 3, Missouri. 1955. $13.75

The authors have been encouraged by the success of the first edition to issue a second, in which they have applied the same general principles of biology to a consideration of the many advances which have been made in knowledge of bone histology and biochemistry. A hypothetical mechanism of bone formation and resorption is outlined, and a basic concept of skeletal growth presented. The aim of the authors is to provide a common basis of discussion for histologists, biochemists, pathologists and clinicians.

Prolonged and Perplexing Fevers

by Chester S. Keefer, M.D., and Samuel E. Leard, M.D. Little, Brown & Co., Boston, Massachusetts, Toronto. 1955. $5.50

An excellent coverage of a subject in a book which will be welcomed by many a doctor as a help in time of trouble.

Counseling in Medical Genetics

by Sheldon C. Reed, Director, Dight Institute For Human Genetics, The University of Minnesota. W. B. Saunders Company, Philadephia and London. 1955. $4.00

It is the declared purpose of this book to help the physician answer the questions of his patients concerning heredity. The book is well calculated to serve that purpose.